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1987 Census of Construction Industries

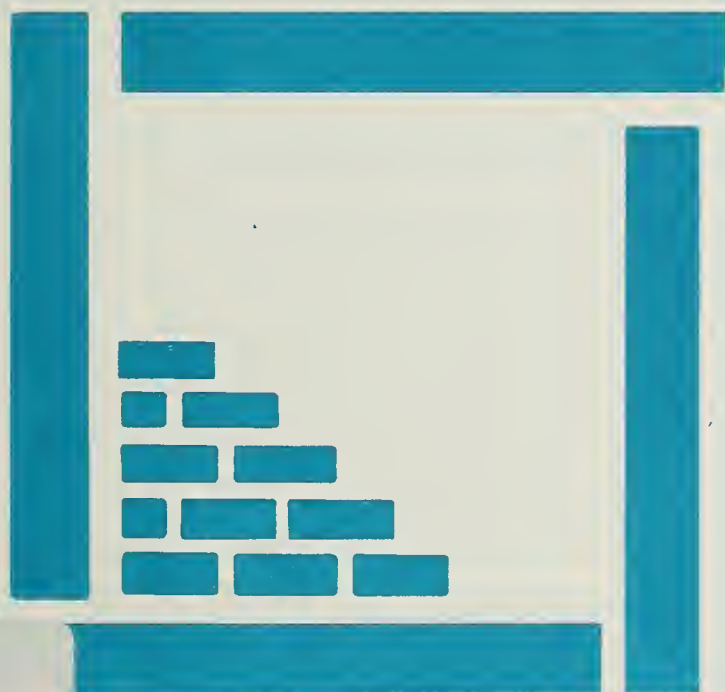
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CC87-I-18

INDUSTRY SERIES

Roofing, Siding, and Sheet Metal Work Special Trade Contractors

Industry 1761



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ACKNOWLEDGMENTS

Many persons participated in the various activities of the 1987 Census of Construction Industries.

The overall planning and review of the census operations were performed by the staff of the Office of the Assistant Director for Economic and Agriculture Censuses.

This report was prepared in the Construction Statistics Division. **Barry A. Rappaport**, Assistant Division Chief for Industry Surveys, was responsible for the overall planning, management, and coordination of the census of construction industries. Planning and implementation were under the direction of **A. William Visnansky**, Chief, Census Operations Branch, with primary staff assistance by **Juliana Van Berkum**, **Barbara J. Hadden**, **Edward R. Glover**, **Susan L. Hostetter**, **Shirley M. Baker**, and **Carolyn J. Stone**. Under the direction of **Jesse Pollock**, **Edward K. Ricketts** and **Dennis K. Duke** developed the sampling plans and variance and estimation specifications.

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If you have any questions concerning the statistics in this report, call (301) 763-7546.

1987

Census of Construction Industries

CC87-I-18

INDUSTRY SERIES

Roofing, Siding, and Sheet Metal Work Special Trade Contractors

Industry 1761

Issued January 1990



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INTRODUCTION

	Page
PURPOSE AND USES OF THE ECONOMIC CENSUSES.....	III
AUTHORITY AND SCOPE	III
AVAILABILITY OF THE DATA	III
WHAT'S NEW IN 1987	III
HISTORICAL INFORMATION	IV
AVAILABILITY OF MORE FREQUENT ECONOMIC DATA.....	IV
SOURCES FOR MORE INFORMATION	IV
CENSUS OF CONSTRUCTION INDUSTRIES—SCOPE AND CLASSIFICATION.....	IV
ESTABLISHMENT BASIS OF REPORTING.....	V
SAMPLE DESIGN, ESTIMATION PROCEDURES, AND RELIABILITY OF ESTIMATES	VI
CENSUS REPORT FORMS	VIII
DATA PROCESSING	VIII
GEOGRAPHIC CLASSIFICATION	VIII
DUPLICATION IN VALUE OF CONSTRUCTION WORK	VIII
SPECIAL TABULATIONS.....	VIII
COMPARABILITY OF CENSUS OF CONSTRUCTION INDUSTRIES DATA WITH OTHER DATA	IX
ABBREVIATIONS AND SYMBOLS	IX

PURPOSE AND USES OF THE ECONOMIC CENSUSES

The economic censuses are the major source of facts about the structure and functioning of the Nation's economy. They provide essential information for government, business, industry, and the general public.

Economic censuses furnish an important part of the framework for such composite measures as the gross national product, input-output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions.

Policy-making agencies of the Federal Government use the data, especially in monitoring economic activity and providing assistance to business.

State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.

Trade associations study trends in their own and competing industries, and keep their members informed of market changes.

Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

AUTHORITY AND SCOPE

Title 13 of the United States Code (sections 131, 191, and 224) directs the Census Bureau to take the economic censuses every 5 years, covering years ending in 2 and 7. The 1987 Economic Censuses consist of the—

- Census of Retail Trade
- Census of Wholesale Trade
- Census of Service Industries
- Census of Transportation
- Census of Manufactures
- Census of Mineral Industries
- Census of Construction Industries

Special programs also cover enterprise statistics and minority-owned and women-owned businesses. (The 1987 Census of Agriculture and 1987 Census of Governments are conducted separately.) The next economic censuses are scheduled to be taken in 1993 covering the year 1992.

AVAILABILITY OF THE DATA

The results of each of the economic censuses are available in printed reports, for sale by the U.S. Government Printing Office, and on microfiche, computer tape, compact discs with read-only memory, and flexible diskettes, for sale by the Census Bureau. Order forms for all types of products are available on request from Customer Services, Census Bureau, Washington, DC 20233. A more complete description of publications being issued from this census is on the inside back cover of this document.

Census facts are also widely disseminated by trade associations, business journals, and newspapers. Volumes containing census statistics are available in most major public and college libraries. Finally, State Data Centers in every State and Business and Industry Data Centers in many States also supply economic census statistics.

WHAT'S NEW IN 1987

Several changes have taken place for the 1987 censuses. Data will be reported on the basis of the newly revised Standard Industrial Classification (SIC) system with selected reports including "bridge tables," linking the old and new classification systems. A new set of metropolitan

areas has been adopted, and more detailed information will be available for businesses with no paid employees. For additional information on these changes, review the subsequent text.

One important change involves receipts of contractors and builders. Prior to 1987, the Census of Construction Industries collected receipts as the primary measure of construction activity. For 1987, the census collected the "value of construction work done" to better measure actual construction activity done during the year. Differences between the two concepts occur when work is done in one year and payment received either from the prior or in the succeeding year. In addition, receipts do not include work a contractor performs for its own account and use.

HISTORICAL INFORMATION

The economic censuses have been taken together as an integrated program at 5-year intervals since 1967, and before that for 1963, 1958, and 1954. Prior to that time, the individual censuses were taken separately at varying intervals.

The economic censuses trace their beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for 1840 and subsequent censuses to include mining and some commercial activities. In 1902, Congress established a permanent Census Bureau and directed that a census of manufactures be taken every 5 years. The 1905 manufactures census was the first time a census was taken apart from the regular every-10-year population census.

The first census of business was taken in 1930, covering 1929. Initially it covered retail and wholesale trade, and construction industries, but it was broadened in 1933 to include some of the service trades.

The 1954 economic censuses were the first to be fully integrated—providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. These were the first censuses to be taken by mail, using lists of firms provided by the administrative records of other federal agencies. Since 1963, administrative records have also been used to provide basic statistics as well for very small firms, reducing or eliminating the need to send them census questionnaires. The Enterprise Statistics Program, which publishes combined data from the economic censuses, was made possible with the implementation of the integrated census program in 1954.

The range of industries covered in the economic censuses has continued to expand. The Census of Construction Industries began on a regular basis in 1967, and the scope of service industries was broadened in 1967, 1977, and 1987. The Census of Transportation began in 1963 as a set of surveys covering travel, transportation of commodities, and trucks. New for 1987 are publications reporting on business establishments engaged in several transportation industries, paralleling the data on establishments in

other sectors. This is part of a gradual expansion in coverage of industries previously subjected to government regulation. The Survey of Minority-Owned Business Enterprises was first conducted as a special project in 1969 and was incorporated into the economic censuses in 1972 along with the Survey of Women-Owned Businesses.

Economic censuses have also been taken in Puerto Rico since 1909, in the Virgin Islands and Guam since 1958, and in the Northern Mariana Islands since 1982.

Statistical reports from the 1982 and earlier censuses provide historical figures for the study of long-term time series, and are available in some large libraries. All of the census data published since 1967 are still available for sale on microfiche from the Census Bureau.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

While the censuses provide complete enumerations every 5 years, there are many needs for more frequent data as well. The Census Bureau conducts a number of monthly, quarterly, and annual surveys, the results of which appear in publication series such as *Current Construction Reports* (building permits, housing starts, and value of new construction put in place), *Current Business Reports* (retail and wholesale trade and service industries), the *Annual Survey of Manufactures*, *Current Industrial Reports*, and the *Quarterly Financial Report*. Most of these surveys, while providing more frequent observations, yield less kind-of-business and geographic detail than the censuses. The *County Business Patterns* program offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1987 Economic Censuses and Related Statistics*. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1987 Economic Censuses*. Contact Customer Services for information on availability.

CENSUS OF CONSTRUCTION INDUSTRIES—SCOPE AND CLASSIFICATION

The 1987 Census of Construction Industries covers all employer establishments (establishments with payroll) primarily engaged in contract construction, construction on their own account for sale, or in subdividing real property

into lots as defined in the 1987 Standard Industrial Classification (SIC) Manual.¹ This industrial classification system has been developed by experts on classification in government and private industry under the guidance of the Office of Management and Budget and is in general use among government agencies and among organizations outside the government.

Contract construction—The SIC manual defines construction in three broad types of activity that follow:

1. **Building construction by general contractors or by operative builders**—General building contractors are primarily engaged in the construction of dwellings, office buildings, stores, farm buildings, and other building projects. Operative builders who build on their own account for sale are also included here. However, investment builders who build structures on their own account for rent are classified in Real Estate.
2. **Heavy construction general contractors**—Heavy construction general contractors are primarily engaged in the construction of highways, bridges, pipelines, sewers and water lines, marine construction, power, and petro-chemical plants and other nonbuilding construction projects. Special trade contractors are classified in heavy construction if they are specifically engaged in the following activities: grading for highway and airport runways; guardrail construction; installation of highway signs; asphalt and concrete construction of roads, highways, streets and public sidewalks; trenching, cable laying; conduit construction; underwater rock removal; pipeline wrapping; or land clearing and leveling.
3. **Construction by other special trade contractors**—These contractors include plumbers, painters, carpenters, electricians, brick layers, roofers, etc. For the most part, they perform their work at the site of construction, although they may also have shops where they perform work incidental to the job site.

General contractors in both the building and the heavy construction field usually assume responsibility for an entire construction project, but may subcontract to others all of the actual construction work or those portions of the project requiring special skills or equipment. Special trade contractors may work for general contractors, for other subcontractors, or may work directly for the owner of the property.

In addition to the industries classified in the SIC manual as Construction, this census also includes one industry

classified in the Real Estate area, SIC 6552, Land Subdividers and Developers, Except Cemeteries. These establishments are engaged in subdividing real property into lots and in developing it for sale on their own account.

Each establishment receiving a questionnaire was requested to report the percent of total dollar value of business done for each kind-of-business activity engaged in during 1987. This information was used for the computer assignment of appropriate industry classifications. During this work, various tests were also made using other data reported on the questionnaire. The proportion of construction work to total business was checked to verify that the establishment was primarily in construction. Also taken into consideration were the types of structures worked on during the year and the extent of work undertaken for other contractors.

Construction establishments often engage in various construction activities. It is necessary, however, to assign a single industry code to the establishment based on its major activity. Therefore, the statistics shown for an industry reflect not only the primary activity of the establishments in the industry, but also their secondary activities. The industry reports, however, do present data on the extent of secondary activities.

A revised edition of the SIC Manual was issued in 1987. Minor modifications were made to three industries in the construction sector: SIC 1611, Highway and Street Construction Contractors, Except Elevated Highways; SIC 1629, Heavy Construction Contractors, N.E.C; and SIC 1771, Concrete Work Special Trade Contractors. The extent of these modifications are explained in the specific texts for those industries. "Bridge tables" are also included showing selected data tabulated using both the previous classification system and the 1987 revision.

ESTABLISHMENT BASIS OF REPORTING

The census of construction industries is conducted on an establishment basis. A "construction establishment" is defined as a relatively permanent office or other place of business where the usual business activities related to construction are conducted. With some exceptions, a relatively permanent office is one which has been established for the management of more than one project or job and which is expected to be maintained on a continuing basis. Such "establishment" activities include, but are not limited to estimating, bidding, purchasing, supervising, and operation of the actual construction work being conducted at one or more construction sites. Separate construction reports were not required for each project or construction site.

Companies with more than one construction establishment were required to submit a separate report for each such establishment operated during all or any part of 1987. The census of construction industries figures represent a summary of records for individual establishments rather than for companies. The census tabulations, therefore, differ from those prepared on a company basis.

¹Standard Industrial Classification Manual: 1987. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Stock No. 041-001-00314-2.

If an establishment engaged in construction and one or more distinctly different lines of economic activity (wholesale or retail trade, service, manufacturing, mining, etc.) at the same place of business, it was requested to file a separate report appropriate to each activity, provided that the activity was of substantial size and separate records were maintained or substantially accurate estimates could be prepared.

If a separate establishment report could not be prepared for each activity, then a construction report was requested covering all activities of that establishment providing that the 1987 value of construction work exceeded the gross receipts from each of its other activities.

Construction businesses with no payroll during 1987 (nonemployers) were not required to file census reports. Tabulation of data for these businesses are based on administrative records and are shown only in U.S. summary publications and the geographic area reports series. Refer to the section on "Sample Design" for details. Foreign construction activities were not included in this census.

SAMPLE DESIGN, ESTIMATION PROCEDURES, AND RELIABILITY OF ESTIMATES

The companies included in the 1987 Census of Construction Industries were identified as part of an operation common to all 1987 Economic Censuses. Construction companies were divided into employers (companies with payroll) and nonemployers (companies without payroll). Statistical information for the employers was obtained in the census by a survey which included all medium size and large employers and a sample of the smaller ones. Census reports were not required from the nonemployers. Statistics on them were obtained from administrative records of other agencies of the Federal Government.

Employer Companies

Developing the sampling frame for employer companies—This operation started with obtaining a list of all construction companies in the active records of the Internal Revenue Service (IRS) which were subject to payment of Federal Insurance Contributions Act taxes. The basic source for this list has been the Internal Revenue Service Business Master File, a comprehensive list of companies engaged in business activities in the United States. The file contains the name, address, and form of ownership of each company and also indicates whether or not the company is subject to the FICA. Each company in this file is assigned a unique employer identification (EI) number which it uses in filing its various reports with the IRS. The Social Security Administration (SSA) maintains a similar list using the same identification numbers, which also contains information on the industrial classification of each company. The Bureau of the Census obtained both of these lists and combined them.

Under special arrangements which safeguarded the confidentiality of the information, the Bureau also obtained administrative records data on payrolls and receipts and added these data to the combined list. The list, thus created from the IRS-SSA information, was a list of employer companies. However, for the 1987 Economic Censuses the basic reporting unit is the "establishment." Therefore, steps were taken to identify the individual establishments of those companies which operate more than one place of business. The information for making this determination was obtained by means of the Company Organization Survey (COS), an annual canvass of all known multiestablishment companies and large single-establishment companies. Thus, the 1987 Economic Census list for single-establishment employer companies was obtained from the IRS-SSA, but the list of establishments of multiestablishment employer companies was obtained directly from those companies in the COS. Refer to the section on "Establishment Basis for Reporting" for details.

In general, the IRS-SSA list provided sufficient industrial classification data to assign a company to the proper economic census, but there were a number of companies for which this information was inadequate or unavailable. A special form, NC-9923, General Schedule, was mailed to all such companies, requesting information on the nature of the company's activities. From the information reported, the company was given an industrial classification code and assigned to the appropriate economic census. Since construction companies found in this way were identified only after the regular census mailing had taken place, they were treated as a supplement to the basic list.

Selecting the employer sample—The sample was designed to provide reliable State and metropolitan area estimates for each construction industry. It consisted of all construction establishments in multiestablishment companies, all single-establishment companies with estimated total employment of 20 employees or more, and a probability sample of single-establishment companies with estimated employment of fewer than 20 employees.

Supplementing the sample were construction companies identified from the NC-9923, General Schedule. Also affecting the sample were the misclassified companies; i.e., companies included in the samples of other trade areas which reported they were construction companies and companies originally classified in construction which reported they were not construction companies.

Of the 533,000 single-establishment employer companies initially classified as construction companies, 147,000 were included in the sample. All of the 13,000 establishments of multiestablishment companies were included in the sample. There was a net increase in the sample of 60,000 establishments resulting from establishments originally unclassified (receiving the NC-9923) or misclassified.

The probability sample of the smaller single-establishment companies was a stratified random sample. Strata were formed from all establishments with the same initial four-digit SIC code, in the same State, in the same metropolitan

area or in the balance of the State, and in the same size class based on estimated total employment. If the four-digit SIC code for an establishment was incomplete, the establishment was placed in a stratum for miscellaneous companies. Because they were small, all companies were included in the sample for the following three industries: SIC 1622, Bridge, Tunnel, and Elevated Highway Construction Contractors; SIC 1795, Wrecking and Demolition Work Special Trade Contractors; and SIC 1796, Installation or Erection of Building Equipment Special Trade Contractors.

Estimation procedures for 1987 and 1982 data—

Since all larger employer companies and some smaller ones were included in the census, sample estimation was required only for the universe of companies not selected with certainty. The published statistics are the totals of the estimates for the sampled companies and the aggregates for the certainty companies. All estimates for 1987 and 1982 published here are simple unbiased estimates of the form:

$$x'_c = \frac{\sum_{i=1}^{n_c} x_i}{n_c} / p_i$$

where: x'_c is the simple unbiased estimate of a characteristic for a publication cell.

x_i is the reported value of a characteristic for an individual establishment in the publication cell.

p_i is the selection probability of that firm.

n_c is the number of firms in the sample for the cell.

Data for certain characteristics were reported as a percentage of the dollar value of business done. Before this formula was applied to those characteristics, it was necessary to convert the reported percentages into dollars.

Reliability of employer statistics—Since the estimates for employer establishments in these reports are based on the samples, they are subject to sampling variability and may be expected to differ from results which would have been obtained if a complete census had been taken using the same forms and procedures. The sampling errors shown in the tables were estimated directly from the sample reports, using methods appropriate for the sample design and form of estimation used.

The relative standard error is a measure of sampling variability, i.e., the variation that might occur by chance because only a sample of the population is surveyed. As calculated for this report, the relative standard error also partially reflects the effect of random errors of response and processing, but it does not take into account the effect of any consistent biases due to those types of errors. The chances are about 68 out of 100 that an estimate from the

sample would differ from a complete census by less than the relative standard error. The chances are about 95 out of 100 that the difference is less than twice the relative standard error and about 99 out of 100 that it is less than 2-1/2 times the relative standard error. Individual estimates with large relative standard errors have been shown in the published tables. Any such estimates should be used with caution. The very large relative standard errors generally occur for the smaller estimates.

Relative standard errors have been calculated for all of the published statistics, although they are shown for each statistic only in the tables presenting detailed statistics. Other tables show relative standard errors only for certain characteristics because of lack of space.

As calculated for this report, the relative standard error measures certain nonsampling errors, but does not measure any systematic biases in the data. Bias is the difference, averaged over all possible samples with the same size and design, between the estimates and the true value being estimated. Nonsampling errors can be attributed to many sources: inability to obtain information about all cases in the sample; definitional difficulties; differences in interpretation of questions; inability or unwillingness of respondents to provide correct information; and errors made in processing the data. Although no direct measurements of the biases have been obtained, it is believed that most of the important response and operational errors were detected in the course of reviewing the data for reasonableness and consistency.

A potential source of bias is in the imputation for those establishments that have not responded by the time of final publication. Data were estimated for establishments that did not report by that date, although selected establishments were contacted again to obtain as much information on the telephone as possible. Some publication cells in which more than 40 percent of the data were not reported have been suppressed.

Nonemployer Companies

As described earlier, the information derived from the business income tax returns of all companies was matched to the census employer file on the basis of common identification numbers. Those business income tax returns which could not be matched, were further classified on the basis of several characteristics. Returns with characteristics consistent with companies without payroll were treated as nonemployers. The nonemployer construction companies were not required to file census reports.

For "number of establishments," each separate income tax return was assumed to be an establishment. "All business receipts" was based on receipts information reported on the tax return.

Since no sampling was involved in the nonemployer establishments, the statistics for nonemployers are not subject to sampling variability. However, these data are subject to an unknown amount of reporting and processing errors which could not be detected by the Census Bureau.

CENSUS REPORT FORMS

Information for the 1987 Census of Construction Industries was obtained from employer establishments primarily through the use of twenty-four questionnaires, determined by industry classification and size. Standard forms and short forms were developed for each of the following SIC groups: 15, 16, 171, 172, 173, 174, 175, 176, 177, 178, and 179 and for the establishments classified in SIC 6552. Establishments with 50 or more employees all received the standard form. A sub-sample of establishments with fewer than 50 employees received short forms instead of the standard forms. The short forms covered only major items and omitted some of the detail found in the longer forms.

In reviewing and developing the questionnaires, comments and recommendations were elicited from construction trade associations and appropriate advisory groups. The Bureau surveyed several thousand firms representing all economic activities to gain insight into the way companies maintain records and to see whether new information could be collected.

DATA PROCESSING

The 1987 census report forms were mailed out in December 1987. They were mailed from and returned to the Census Bureau's Data Preparation Division in Jeffersonville, Ind., where routine editing and coding of the report forms were also accomplished. Collection of these report forms was essentially completed in July 1988.

The returned reports underwent extensive processing. A preliminary edit done at the time of data entry identified obviously deficient reports and reports needing clarification. When necessary, these problems were resolved by further contact with the respondents. Next, the data were transmitted to Census Bureau headquarters near Washington, DC.

Data records, then, underwent a detailed computer review and analysis. The records containing significant problems were referred for further analytical review and, if necessary, contacts were made with the respondents. The computer performed most classification coding (such as industry coding, geographic coding, and size coding), and imputation for missing items or for reports not received in time for tabulation. The imputation was performed on an industry (or industry group)-State (or geographic group) basis using all available response and administrative data.

The data records were then tabulated on an industry basis. Industry totals were subjected to analytical review, and selected statistics were prepared for the preliminary reports. Corrections resulting from this review were made to the computer records and final tabulations were produced.

The review of a preliminary report for an industry often uncovered the need for corrections or revisions to the data for another industry for which a preliminary report had already been published. The final reports incorporate all

revisions and corrections made during the review of the preliminary reports and contain considerable more data than were published in those reports.

GEOGRAPHIC CLASSIFICATION

Information for the 1987 Census of Construction Industries' final industry report series is classified on the basis of two types of geographic distributions: (1) physical location of the establishment, and (2) location of construction work. A separate code was assigned on each basis allowing us to present data by both physical locations of the establishment and location of construction work.

The geographic area reports series presents similar data by industry for each State (physical location of the establishment) and for selected MSA's, CMSA's and PMSA's.

DUPLICATION IN VALUE OF CONSTRUCTION WORK

The aggregate of value of construction work reported by all construction establishments in each of the several industry, geographic area, or other groupings in this census, contains varying amounts of duplication, since the construction work of one firm may be subcontracted to other construction firms and also be included in the subcontractors' value of construction work. To avoid this duplication, a "net" value of construction work figure has been derived for each establishment by subtracting the costs for construction work subcontracted to others from the value of construction work.

Duplication in value of business between other construction and nonconstruction industries, results from the use of products of these other industries as input materials by construction establishments. "Value added," avoids this duplication and is, for most purposes, the best measure for comparing the relative economic importance of industries or areas. "Value added," is defined in the 1987 Census of Construction Industries as equal to dollar value of business done less costs for construction work subcontracted to others and payments for materials, components, supplies, and fuels. However, for SIC 6552 and SIC 1531 where land receipts are significant, land receipts are also subtracted from dollar value of business done.

SPECIAL TABULATIONS

Special tabulations of data collected in the 1987 Census of Construction Industries may be obtained on computer tape or in tabular form. The data will be in summary form and subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) as are the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact and detailed specifications of the type and format of the data to be provided, should be directed to the Chief, Construction Statistics Division, Bureau of the Census, Washington, DC, 20233.

To discuss a special tabulation before submitting specifications, call 301-763-7546.

COMPARABILITY OF CENSUS OF CONSTRUCTION INDUSTRIES DATA WITH OTHER DATA

Data contained in the reports of the 1987 Census of Construction Industries are not the same as the data published in the Census Bureau's monthly Construction Reports, Series C30, Value of New Construction Put in Place. The main difference is that the C30 series covers all new construction put in place without regard to who is performing the construction activity, whereas the construction census figures cover both new construction and maintenance and repair work done by establishments classified in the construction industry. Significant amounts of construction are done by establishments classified outside of construction (in real estate, manufacturing, utilities and communications, for example), both as "force account" construction and construction done for others. In addition, the value in place series includes construction-related expenses such as architectural and engineering costs and the costs of materials supplied by owners which are normally not reflected in the Census of Construction.

Data contained in the reports of the census of construction industries may also differ from industry data in "Employment and Earnings Statistics," published by the Bureau of Labor Statistics, and "Statistics of Income," published by the Internal Revenue Service. These differences arise from varying definitions of scope, coverage, timing, classification, and methodology.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in this publication:

*	Sampling error exceeds 40 percent.
**	Represents the sum of all employees during pay periods including 12th of March, May, August, and November, divided by 4.
-	Represents zero.
†	Represents value of construction work less costs for construction work subcontracted to others. (See Duplication in Value of Construction Work.)
††	Represents dollar value of business done less costs for construction work subcontracted to others, and costs for materials, components, supplies, and fuels. In SIC's 1531 and 6552, land receipts are also subtracted from dollar value of business done. (See Duplication in Value of Construction Work.)
(D)	Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
(NA)	Not available.
(S)	Withheld because estimate did not meet publication standards on the basis of either the response rate, associated relative standard error, or a consistency review.
(W)	Greater than zero but less than 1 percent.
(X)	Not applicable.
n.s.k.	Not specified by kind.

Users' Guide for Locating Statistics in This Report by Table Number

Statistics	For U.S.	By State	By employment size	By size class of dollar value of business done	By type, class, ownership, kind of business, and location of construction ¹	By specialization in types of construction
Assets and depreciation (gross book value):						
Beginning of year—buildings, machinery and equipment	3					
End of year—total	1, 3	1	5	6		
End of year—buildings, machinery and equipment	3					
Depreciation charges during year—buildings, machinery and equipment	3					
Capital expenditures:						
Total capital expenditures	1, 3	1	5	6		
New buildings—machinery and equipment	3					
Used buildings—machinery and equipment	3					
Communication services, costs for	2					
Employees:						
All employees—average number	1, 2	1	5	6		8
Construction workers—average number	1, 2, 9	1, 9				
Other employees—average number	2					
Employer costs for fringe benefits—legally required and voluntary expenditures	2					
Establishments—number in business during year	1, 2, 4, 9	1, 9	5	6		8
Hours—construction workers:						
Total	1, 2, 9	1, 9	5	6		
Quarterly	2, 9	9				
Inventories	4					
Materials, components, supplies, and fuels—costs for	1, 2	1	5	6		
Payroll:						
First quarter, all employees	2					
Annual:						
All employees	1, 2	1	5	6		8
Construction workers	1, 2	1				
Other employees	2					
Power, fuels, and lubricants—costs for	2					
Proprietors and working partners	2					
Ratios, State	13	13				
Value and receipts:						
Dollar value of business done, total	2		5	6	11	
Value of construction work, total	1, 2, 4	1	5	6	2, 7, 10	8
For work subcontracted in from others	2					
Other business receipts and land receipts ²	2					
Net value of construction work	1, 2	1	5	6		8
Value added	1, 2	1	5	6		8
Rental costs:						
Total	1, 2	1	5	6		
For machinery and equipment	2					
For buildings	2					
Repairs to buildings and other structures	2					
Repairs to machinery and equipment	2					
Selected industry ratios	12					
Subcontract work to others, costs for	1, 2	1	5	6		8

Note: Data for 1982 and earlier years are also available in some of these tables.

¹Type—buildings, roads, etc. Class—new construction; additions, alterations, or reconstruction; or maintenance and repair work. Ownership—private or government owned.

²Land receipts are shown separately for SIC's 1531 and 6552 only.

CONTENTS

Roofing, Siding, and Sheet Metal Work Special Trade Contractors

[Page numbers listed here omit the prefix that appears as part of the number of each page]

	Page
Introduction	III
Users' Guide for Locating Statistics in This Report by Table Number	X
Summary of Findings.....	2

FIGURES

1. Value of Construction Work by Type of Construction	3
2. Selected Costs Per Dollar Value of Business Done.....	3

TABLES

Statistics for Establishments With Payroll

1. General Statistics by State: 1987 and 1982	4
2. Detailed Statistics: 1987 and Earlier Census Years	6
3. Assets, Capital Expenditures, and Depreciation: 1987 and 1982.....	7
4. Value of Inventories: 1987 and 1986	7
5. Selected Statistics by Employment Size Class: 1987 and 1982	8
6. Selected Statistics by Size Class of the Dollar Value of Business Done: 1987 and 1982.....	8
7. Value of Construction Work by Type of Construction: 1987 and 1982.....	9
8. Selected Statistics by Specialization in Types of Construction: 1987	10
9. Quarterly Construction Worker Hours and Employment by State: 1987.....	12
10. Value of Construction Work by Location of Construction Work: 1987 and 1982	14
11. Dollar Value of Business Done by Kind of Business Activity: 1987 and 1982	15
12. Selected Industry Ratios: 1987 and 1982	16
13. Selected Industry Ratios by State: 1987	17

Statistics for Establishments Without Payroll appear in the U.S. Industry Summary Report.

APPENDIXES

A. Explanation of Terms	A-1
B. Standard Industrial Classification Titles for Industry Groups and Industries	B-1
C. Geographic Divisions and States	C-1

Publication Program	Inside back cover
---------------------------	-------------------

SUMMARY OF FINDINGS

Establishments classified in this industry are primarily engaged in the installation of roofing (including roof spraying, painting, or coating), siding and sheet metal work. Sheet metal work performed by plumbing, heating, and air-conditioning contractors in conjunction with the installation of plumbing, heating, and air-conditioning equipment are classified in Industry 1711, Plumbing, Heating, and Air-Conditioning Special Trade Contractors. For additional examples, refer to the 1987 Standard Industrial Classification (SIC) Manual published by the Office of Management and Budget, Executive Office of the President.

During 1987, the establishments with paid employees classified in this industry accounted for \$15.3 billion in total dollar value of business. Of this amount, \$15.0 billion were for the value of construction work. These establishments paid out \$5.6 billion for materials, components, and supplies and \$845 million for construction work subcontracted to others. Costs for selected power, fuels, and lubricants for this industry were \$252 million. Value added for 1987 was \$8.5 billion.

There were 25,673 establishments with total employment averaging 231,137 during the year. Total payroll for 1987 was \$4.3 billion. Total hours worked by construction workers during the year were 294 million hours.

Larger establishments with 20 employees or more, while representing only 11 percent of the total number of

employer establishments in this industry accounted for 55 percent of all business done.

A "construction establishment" is defined as a relatively permanent office, or other place of business, where the usual business activities related to construction are conducted. A separate census report was required from each sampled establishment covering domestic operations. Separate reports were not, however, required for each project or construction site.

In 1987, the value of construction work was collected to better measure actual construction activity done during the year. Construction receipts, as reported in earlier censuses, may have included the value of work done before or after the calendar year and may have excluded the value of work in progress during the calendar year. Receipts may have also excluded work done by builders engaged in construction for sale on their own account or for their own use. All dollar values are shown in current dollars for the years specified and have not been adjusted for inflation.

The data in this report are estimated from a sample survey and are subject to sampling variability as well as errors of response and nonreporting. The relative standard error shown in the tables is a measure of sampling variability. Descriptions of the sampling, estimating procedures, and data reliability are included in the Introduction.

Figure 1. **Value of Construction Work by Type of Construction**

(Percent)

1987 
1982 

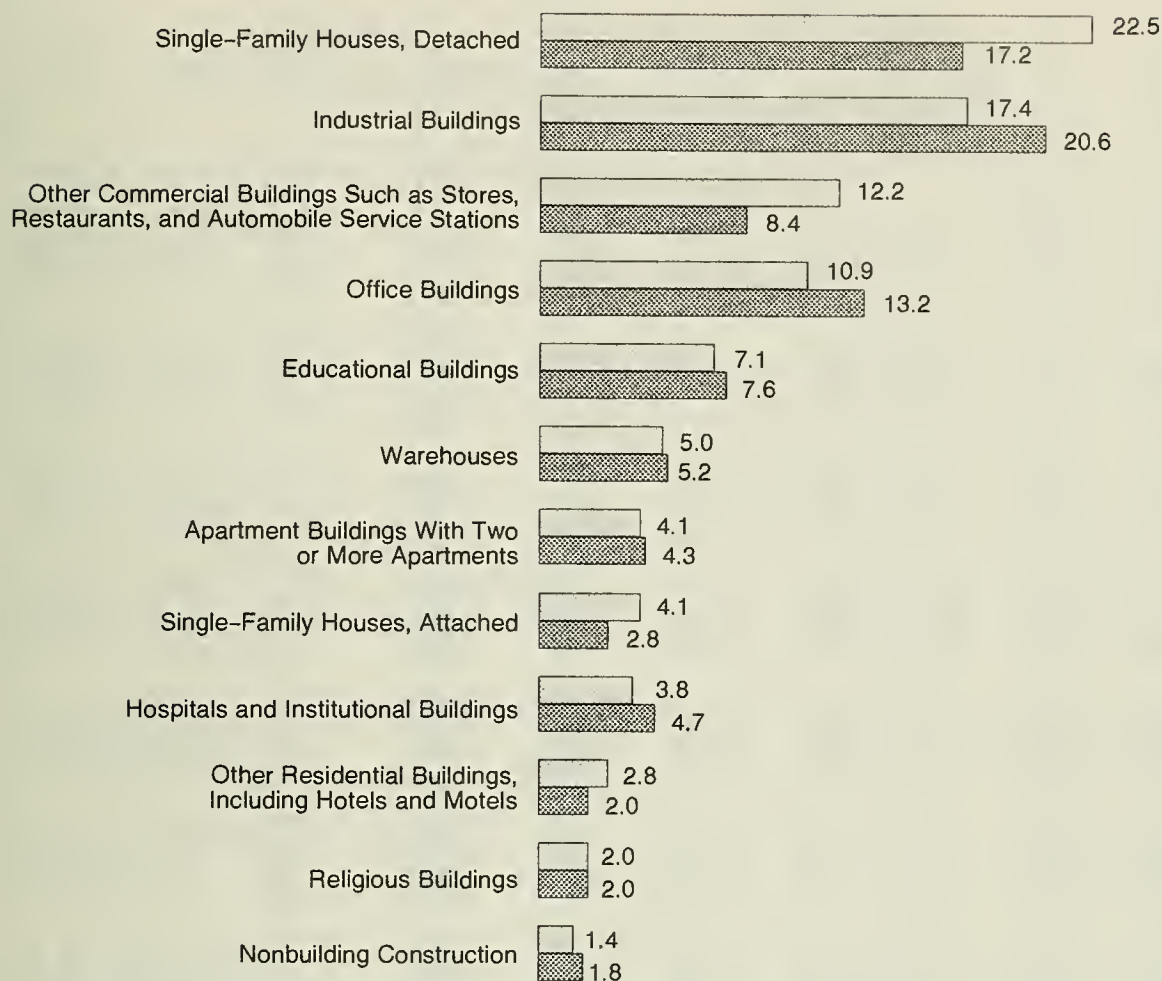


Figure 2. **Selected Costs Per Dollar Value of Business Done**

(Percent)

1987 
1982 

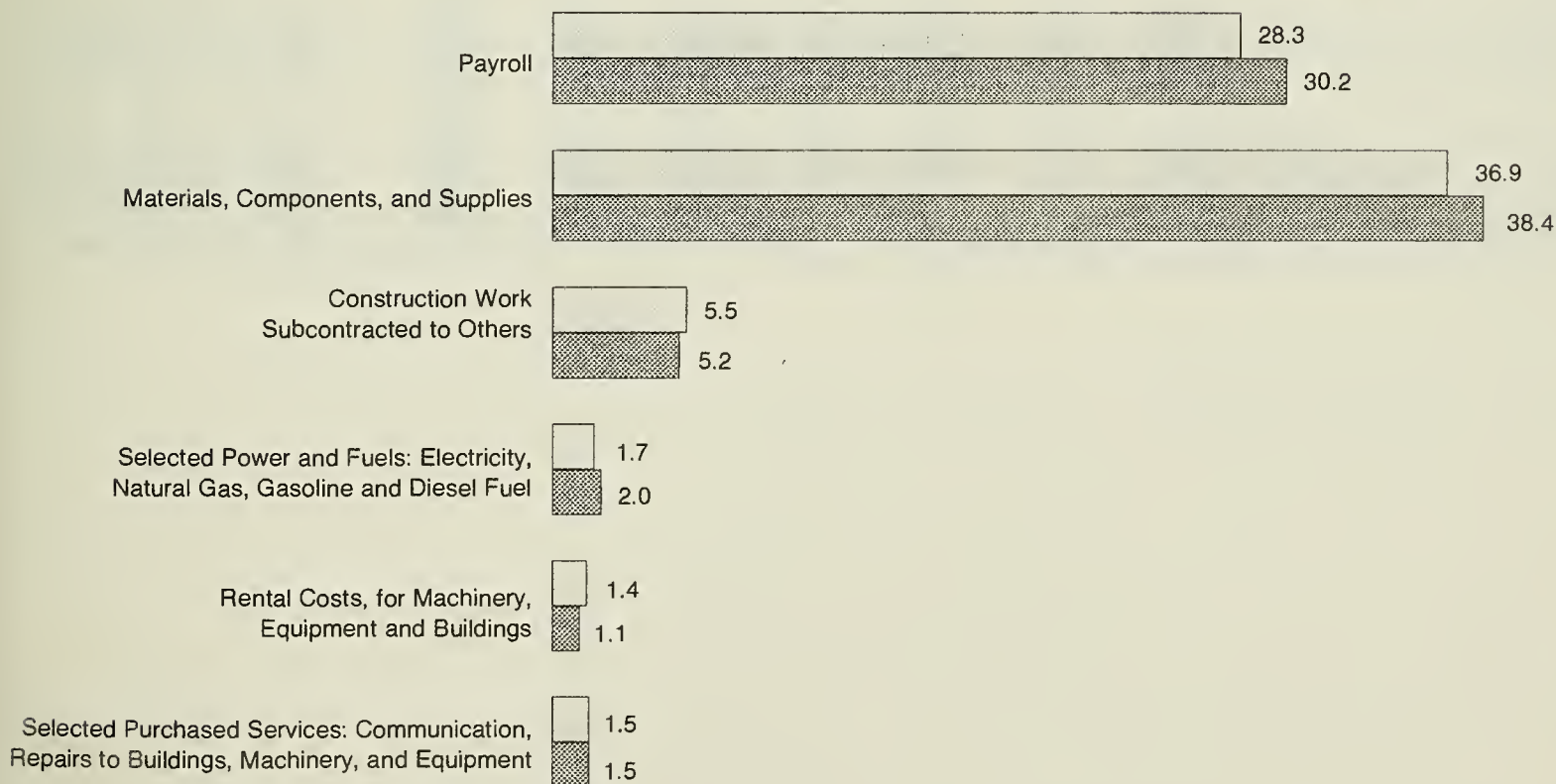


Table 1. General Statistics for Establishments With Payroll by State: 1987 and 1982

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Location of establishment	1987							
	Number of establishments	Employees**		Payroll		Construction worker hours (thousands)	Value of construction work	Net value of construction work†
		All	Construction workers	All employees	Construction workers			
A	B	C	D	E	F	G	H	
United States	25 673	231 137	186 916	4 313 694	3 111 000	293 990	15 027 806	14 182 802
Alabama	315	2 631	2 175	38 051	26 600	3 012	141 776	135 863
Alaska	32	215	176	6 799	4 904	266	27 073	26 012
Arizona	389	4 596	3 782	73 254	53 154	4 991	261 650	254 428
Arkansas	204	1 604	1 310	24 910	19 244	2 335	88 889	84 356
California	2 625	27 289	22 173	524 590	376 902	33 192	1 907 960	1 850 404
Colorado	383	3 552	2 913	56 856	42 490	4 778	210 124	198 190
Connecticut	419	3 520	2 844	80 080	56 530	4 345	276 709	254 974
Delaware	92	800	645	15 623	11 369	1 050	51 477	48 160
District of Columbia	*14	526	478	15 078	13 031	697	34 671	33 672
Florida	1 878	17 824	14 529	263 854	189 894	23 038	1 008 422	946 729
Georgia	547	6 156	5 074	107 505	80 377	7 968	361 902	337 455
Hawaii	86	997	774	20 441	14 146	1 130	78 178	74 268
Idaho	119	983	801	14 397	10 995	1 089	57 472	55 809
Illinois	1 097	10 868	8 586	247 095	177 181	13 579	828 243	777 856
Indiana	510	5 072	4 086	104 246	74 248	6 238	342 620	323 030
Iowa	246	2 376	1 883	44 643	32 242	3 222	169 334	158 268
Kansas	281	2 396	1 911	42 552	29 083	2 811	141 281	134 314
Kentucky	317	2 684	2 165	41 901	30 801	3 336	149 923	139 239
Louisiana	306	3 043	2 379	47 759	32 538	3 803	156 060	148 163
Maine	120	943	777	18 093	13 596	1 544	65 868	63 051
Maryland	612	6 473	5 395	120 496	85 797	8 828	381 629	362 713
Massachusetts	724	6 262	4 991	129 169	89 670	7 732	444 392	407 039
Michigan	773	7 623	6 055	169 336	123 274	9 996	608 683	561 111
Minnesota	381	3 456	2 687	77 224	55 423	4 346	270 921	250 797
Mississippi	208	1 439	1 156	21 969	14 442	1 618	83 340	79 649
Missouri	585	5 390	4 354	110 754	83 202	6 826	364 603	337 586
Montana	62	356	269	6 498	4 727	380	27 697	26 533
Nebraska	161	1 419	1 104	23 988	16 628	1 826	86 022	81 673
Nevada	101	1 145	931	21 166	15 735	1 342	77 180	75 501
New Hampshire	154	1 145	927	24 579	18 124	1 772	79 974	73 509
New Jersey	1 207	9 027	7 186	202 799	145 027	11 697	715 806	667 643
New Mexico	141	1 518	1 250	24 041	17 073	1 936	89 298	85 598
New York	1 792	14 567	11 770	332 448	236 107	18 744	1 049 763	985 927
North Carolina	746	6 266	5 142	87 411	61 801	8 225	310 919	296 828
North Dakota	67	492	381	8 493	5 748	614	34 766	32 506
Ohio	1 303	9 820	7 916	196 589	146 721	12 900	676 917	635 108
Oklahoma	248	2 179	1 718	36 946	26 432	2 525	123 105	115 598
Oregon	354	2 700	2 124	40 571	29 377	2 877	153 110	146 405
Pennsylvania	1 396	10 865	8 761	203 067	147 107	13 699	726 695	684 001
Rhode Island	155	947	755	18 848	13 842	1 307	58 734	55 491
South Carolina	305	2 593	2 203	36 019	26 412	3 794	126 373	119 579
South Dakota	59	483	373	8 999	5 280	668	32 451	28 516
Tennessee	432	4 239	3 492	72 912	51 859	5 583	248 581	234 025
Texas	1 432	13 306	10 682	211 534	150 022	17 282	693 455	650 142
Utah	162	1 501	1 228	25 096	19 147	2 112	100 378	96 791
Vermont	67	638	543	11 521	9 233	978	40 984	38 966
Virginia	685	7 039	5 836	115 667	83 956	9 483	377 384	357 009
Washington	616	4 480	3 651	83 454	63 552	5 448	323 387	305 621
West Virginia	94	935	783	18 797	13 680	1 003	55 959	54 910
Wisconsin	595	4 317	3 429	79 718	57 726	5 498	284 358	271 807
Wyoming	55	417	336	5 833	4 528	504	21 284	19 955

†In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

1987—Con.						1982			Relative standard error of estimate (percent) for column—			Location of establishment
Value added††	Cost of materials, components, supplies, and fuels	Cost of construction work sub-contracted to others	Rental cost for machinery, equipment, and buildings	Capital expenditures, other than land	End-of-year gross book value of depreciable assets	All employees**	Total construction receipts¹	Value added††				
I	J	K	L	M	N	O	P	Q	B	H	M	
8 524 431	5 889 456	845 003	215 477	249 240	1 806 667	191 489	9 836 510	5 459 875	1	1	2	U.S.
81 933	54 706	5 913	1 033	2 959	17 405	3 289	117 551	63 012	6	6	28	AL
14 152	(D)	1 061	238	247	4 675	535	40 285	22 510	8	5	11	AK
148 528	(D)	7 221	2 723	5 774	30 468	2 731	137 335	70 879	4	4	5	AZ
49 455	(D)	4 533	952	1 491	11 051	1 273	61 493	33 805	9	10	23	AR
1 109 870	767 118	57 555	32 437	30 244	187 110	18 461	1 031 856	580 943	2	1	6	CA
114 338	84 407	11 933	3 474	2 069	23 340	3 508	180 268	95 353	7	5	30	CO
160 446	95 379	21 735	4 383	4 883	25 872	2 657	152 484	83 832	5	4	15	CT
32 159	(D)	3 317	739	1 180	6 283	874	45 020	26 395	10	13	40	DE
32 158	(D)	998	(D)	234	3 067	389	19 734	14 200	4	3	10	DC
527 615	431 064	61 692	15 251	18 529	118 367	14 931	653 002	348 239	3	3	7	FL
200 241	141 032	24 446	3 945	7 003	55 834	4 937	210 313	105 089	4	4	10	GA
50 739	27 831	3 909	1 341	763	5 444	945	52 644	29 940	5	3	16	HI
27 576	(D)	1 663	352	710	9 403	501	27 892	15 625	15	13	19	ID
495 388	292 850	50 387	10 132	10 081	89 967	10 535	641 758	378 480	2	2	7	IL
194 843	131 937	19 589	3 691	4 460	39 052	4 404	227 348	137 655	4	3	14	IN
88 071	71 931	11 065	2 906	3 571	30 040	3 473	204 048	113 778	5	5	18	IA
79 963	59 805	6 967	2 069	2 052	20 762	1 685	81 088	45 911	4	4	14	KS
82 619	60 215	10 684	1 481	5 538	25 403	1 841	84 111	50 420	6	6	18	KY
95 148	56 317	7 896	2 123	4 210	22 288	3 420	146 900	91 464	8	5	31	LA
39 295	27 197	2 817	978	2 211	15 218	678	31 177	17 079	6	6	19	ME
230 766	136 650	18 916	5 862	10 328	63 662	4 615	205 995	116 021	4	3	6	MD
252 178	158 552	37 352	6 922	7 341	40 434	4 484	226 368	125 919	5	3	12	MA
333 035	237 806	47 572	7 682	9 511	70 078	6 284	395 702	236 464	3	3	13	MI
143 778	114 275	20 124	3 937	4 070	31 537	3 114	197 252	114 647	4	4	12	MN
41 832	40 437	3 691	993	1 118	11 032	1 158	39 653	21 150	8	7	22	MS
214 323	127 749	27 017	4 633	5 654	46 456	4 167	217 519	116 722	4	4	12	MO
14 986	(D)	1 163	287	*247	2 401	393	24 877	13 866	8	8	55	MT
46 770	36 571	4 348	1 168	1 494	10 509	1 524	105 349	52 511	8	8	20	NE
45 112	30 674	1 679	1 759	880	10 098	708	44 706	24 830	11	9	31	NV
44 879	(D)	6 464	1 109	2 358	16 712	633	31 547	15 546	9	8	17	NH
417 441	255 403	48 163	9 678	10 547	69 156	6 301	316 155	183 417	3	4	13	NJ
53 825	34 978	3 700	1 175	1 263	15 028	1 030	44 621	24 406	7	12	22	NM
618 481	384 233	63 836	15 015	14 108	103 889	11 436	638 621	346 784	2	2	8	NY
169 277	131 854	14 091	4 401	6 466	42 537	5 197	197 431	98 394	4	3	15	NC
17 227	17 115	2 259	(D)	666	5 195	462	34 261	16 156	8	8	36	ND
383 140	265 327	41 809	9 529	8 638	83 072	8 134	454 297	248 238	3	3	10	OH
67 499	50 882	7 506	1 809	1 918	21 572	2 569	129 485	69 604	7	6	17	OK
85 817	61 871	6 705	3 167	1 391	12 202	1 637	81 273	44 659	7	6	20	OR
413 808	276 714	42 694	11 097	11 934	82 237	10 496	553 508	303 551	3	2	9	PA
32 773	23 066	*3 243	634	1 348	9 296	661	31 047	16 869	9	7	24	RI
66 796	54 400	6 794	1 879	2 196	12 513	2 320	87 896	45 600	5	5	17	SC
16 835	(D)	3 934	219	296	4 141	428	19 587	11 466	11	8	21	SD
126 651	109 009	14 556	2 368	4 613	31 296	3 693	159 355	88 356	4	5	15	TN
395 947	274 740	43 312	11 781	12 394	118 205	14 732	725 380	383 724	3	3	11	TX
49 933	47 848	3 586	1 102	943	11 926	1 383	67 188	34 127	6	5	24	UT
23 210	16 481	2 017	532	598	7 003	479	22 892	12 274	6	4	21	VT
210 561	153 820	20 375	5 225	8 591	50 744	4 620	192 016	100 632	4	4	12	VA
179 254	130 357	17 766	5 200	3 621	34 691	3 254	215 688	135 648	5	4	16	WA
33 798	22 284	1 048	568	753	7 253	717	35 405	22 318	7	4	17	WV
158 898	120 663	12 551	4 304	5 552	39 635	3 482	178 655	104 082	4	4	12	WI
11 041	8 927	1 328	367	*174	1 084	295	16 463	7 266	19	12	48	WY

Table 2. Detailed Statistics for Establishments With Payroll: 1987 and Earlier Census Years

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	1987	1982	1977	1972	Relative standard error of estimate (percent)			
					1987	1982	1977	1972
Number of establishments in business during year	25 673	21 152	20 577	18 535	1	1	2	2
Proprietors and working partners	7 016	7 791	12 273	11 973	3	2	3	3
All employees**	231 137	191 489	171 931	158 051	1	1	1	1
Construction workers:								
March	168 096	139 078	125 835	117 207	1	1	1	1
May	186 686	156 478	148 478	130 050	1	1	1	1
August	202 798	168 728	157 631	143 943	1	1	1	2
November	190 106	162 767	152 661	137 610	1	1	1	2
Average	186 916	158 901	146 307	134 189	1	1	1	1
Other employees:								
March	44 103	32 404	24 637	24 477	1	1	1	3
May	43 713	(NA)	(NA)	(NA)	1	(NA)	(NA)	(NA)
August	44 738	(NA)	(NA)	(NA)	1	(NA)	(NA)	(NA)
November	44 328	(NA)	(NA)	(NA)	1	(NA)	(NA)	(NA)
Average	44 221	(NA)	(NA)	(NA)	1	(NA)	(NA)	(NA)
Construction worker hours (thousands):								
January to March	62 867	49 341	(NA)	(NA)	1	1	(NA)	(NA)
April to June	73 612	57 739	(NA)	(NA)	1	1	(NA)	(NA)
July to September	82 076	63 483	(NA)	(NA)	1	1	(NA)	(NA)
October to December	75 434	60 115	(NA)	(NA)	1	1	(NA)	(NA)
Total hours worked	293 990	230 679	(NA)	(NA)	1	1	(NA)	(NA)
Payroll, all employees	4 313 694	3 034 812	1 967 824	1 405 756	(W)	(W)	1	1
Payroll, construction workers	3 111 000	2 320 658	1 555 286	1 137 273	1	1	1	1
Payroll, other employees	1 202 693	714 154	412 538	268 483	1	1	1	1
First quarter payroll, all employees	921 919	635 491	395 479	(NA)	1	1	(W)	(NA)
Employer costs for fringe benefits, all employees	1 084 331	642 394	407 503	(NA)	1	1	(W)	(NA)
Legally required expenditures	768 595	436 104	240 107	(NA)	1	1	1	(NA)
Voluntary expenditures	315 736	206 290	167 396	(NA)	1	1	(W)	(NA)
Dollar value of business done	15 258 891	10 033 533	6 320 693	3 999 967	1	1	1	1
Value of construction work ¹	15 027 806	9 836 510	6 200 390	3 940 243	1	1	1	1
Value of construction work subcontracted in from others	5 685 007	4 045 325	2 998 790	1 732 057	1	1	1	1
Land receipts ²	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Other business receipts	231 085	197 023	120 304	59 724	3	2	2	5
Net value of construction work†	14 182 802	9 315 228	5 938 778	3 752 108	1	1	1	1
Value added††	8 524 431	5 459 875	3 420 412	2 347 983	1	1	1	2
Selected costs	6 734 460	4 573 658	2 900 282	1 651 984	1	1	1	2
Materials, components, and supplies ³	5 637 184	3 848 560	2 535 596	1 463 849	1	1	1	2
Construction work subcontracted to others	845 003	521 282	261 612	188 135	2	1	2	4
Selected power, fuels, and lubricants	252 272	203 816	103 075	(NA)	1	1	1	(NA)
Electricity	39 938	27 879	12 350	(NA)	1	2	1	(NA)
Natural gas	12 525	11 310	5 667	(NA)	2	2	3	(NA)
Gasoline and diesel fuel	184 020	151 864	75 166	(NA)	1	1	1	(NA)
On highway use	170 647	(NA)	(NA)	(NA)	1	(NA)	(NA)	(NA)
Off highway use	13 373	(NA)	(NA)	(NA)	3	(NA)	(NA)	(NA)
Other, including lubricating oils and greases	15 786	12 762	9 893	(NA)	3	2	3	(NA)
Rental cost for machinery, equipment, and buildings	215 477	109 183	49 191	(NA)	2	1	1	(NA)
For machinery and equipment	86 984	51 791	23 525	14 164	2	2	1	3
For buildings	128 492	57 392	25 666	(NA)	2	2	1	(NA)
Selected purchased services	230 744	148 914	88 306	(NA)	1	1	1	(NA)
Communication services	94 106	59 982	35 249	(NA)	2	2	1	(NA)
Repairs to buildings and other structures	20 105	12 386	6 334	(NA)	3	4	4	(NA)
Repairs to machinery and equipment	116 532	76 546	46 723	(NA)	1	1	1	(NA)
Ownership of construction projects:								
Value of construction work ¹	15 027 806	9 836 510	6 200 390	3 940 243	1	1	1	1
Government owned	2 285 520	1 552 323	803 964	828 641	2	3	1	2
Federal	673 356	(NA)	(NA)	(NA)	3	(NA)	(NA)	(NA)
State and local	1 612 163	(NA)	(NA)	(NA)	2	(NA)	(NA)	(NA)
Privately owned	12 742 285	8 284 187	5 396 426	3 111 602	1	1	1	1

¹In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

²Data were collected separately for establishments classified in SIC 1531, Operative Builders, and SIC 6552, Subdividers and Developers, Except Cemeteries. For all other industries, data are included in other business receipts.

³For 1972, includes data for power, fuels, and lubricants.

Table 3. Assets, Capital Expenditures, and Depreciation for Establishments With Payroll: 1987 and 1982

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item			Relative standard error of estimate (percent)	
			1987	1982
BUILDINGS AND OTHER STRUCTURES, MACHINERY, AND EQUIPMENT				
Beginning-of-year gross book value of depreciable assets	1 616 963	1 279 401	1	1
Capital expenditures, other than land	249 240	157 529	2	2
New	188 480	115 623	2	2
Used	60 760	41 906	4	3
Retirements and disposition of depreciable assets	59 537	43 834	4	4
End-of-year gross book value of depreciable assets	1 806 667	1 393 096	1	1
Depreciation charges during year	230 558	181 981	1	1
Buildings and other Structures, Additions, and Related Facilities				
Beginning-of-year gross book value of depreciable assets	382 501	328 593	3	2
Capital expenditures, other than land	36 983	25 027	7	4
New buildings and other structures	23 497	18 459	9	4
Used buildings and other structures	13 485	6 567	8	8
Retirements and disposition of depreciable assets	7 309	6 582	10	11
End-of-year gross book value of depreciable assets	412 175	347 038	3	2
Depreciation charges during year	34 104	26 410	4	4
Machinery and Equipment				
Beginning-of-year gross book value of depreciable assets	1 234 462	950 807	1	1
Capital expenditures, other than land	212 257	132 502	2	2
New machinery and equipment, including automobiles and trucks	164 982	97 164	2	2
New automobiles and trucks, intended primarily for highway use	103 685	51 857	3	3
Used machinery and equipment, including automobiles and trucks	47 274	35 338	4	3
Retirements and disposition of depreciable assets	52 227	37 252	4	4
End-of-year gross book value of depreciable assets	1 394 492	1 046 058	1	1
Depreciation charges during year	196 454	155 571	2	1

Table 4. Value of Inventories for Establishments With Payroll: 1987 and 1986

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Establishments with payroll	Relative standard error of estimate (percent)
All establishments:		
Number	25 673	1
Value of construction work	15 027 806	1
Establishments with inventories:		
Number	11 183	2
Value of construction work	10 293 228	1
Inventories ¹ :		
End of 1987, materials and supplies	351 744	2
End of 1986, materials and supplies	338 571	2
Establishments with no inventories:		
Number	10 663	2
Value of construction work	2 839 725	3
Establishments not reporting:		
Number	3 827	4
Value of construction work	1 894 853	3

¹Inventories at cost or market prior to any adjustment to correct to LIFO values.

Table 5. Selected Statistics for Establishments With Payroll by Employment Size Class: 1987 and 1982

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Selected statistics	Total	Establishments with an average of—								
		1 to 4 employees	5 to 9 employees	10 to 19 employees	20 to 49 employees	50 to 99 employees	100 to 249 employees	250 to 499 employees	500 to 999 employees	1,000 employees or more
1987										
Number of establishments -----	25 673	(S)	5 990	3 674	2 191	481	123	7	1	-
All employees** -----	231 137	(S)	38 854	48 731	64 632	31 422	17 038	3 076	(D)	-
Payroll, all employees -----	4 313 694	(S)	550 130	849 670	1 337 692	741 197	437 862	66 297	(D)	-
Construction worker hours (thousands) -----	293 990	(S)	43 600	59 712	84 736	44 615	25 031	4 276	(D)	-
Dollar value of business done -----	15 258 891	(S)	2 053 568	2 997 027	4 504 683	2 372 727	1 348 934	199 140	(D)	-
Value of construction work ¹ -----	15 027 806	(S)	2 025 854	2 958 609	4 435 043	2 323 211	1 513 311	(D)	(D)	-
Net value of construction work† -----	14 182 802	(S)	1 917 743	2 793 131	4 213 586	2 197 758	1 438 808	(D)	(D)	-
Value added†† -----	8 524 431	(S)	1 168 457	1 671 320	2 538 488	1 345 678	791 068	133 285	(D)	-
Cost of materials, components, supplies, and fuels -----	5 889 456	(S)	777 000	1 160 228	1 744 738	901 595	489 156	60 062	(D)	-
Cost of construction work subcontracted to others -----	845 003	(S)	108 111	165 478	221 456	125 452	68 710	5 793	(D)	-
Rental cost for machinery, equipment, and buildings -----	215 477	(S)	31 114	48 842	60 784	31 446	18 777	3 425	(D)	-
Capital expenditures, other than land -----	249 240	(S)	37 299	58 821	67 912	29 460	15 775	6 017	(D)	-
End-of-year gross book value of depreciable assets -----	1 806 667	(S)	263 495	383 709	528 521	244 827	141 368	20 323	(D)	-
1982										
All employees** -----	191 489	23 568	29 970	37 877	53 042	25 114	16 269	3 240	2 408	-
Total construction receipts ¹ -----	9 836 510	966 393	1 266 182	1 821 395	2 987 817	1 565 934	913 698	142 737	172 353	-
Value added†† -----	5 459 875	475 541	682 893	1 019 851	1 650 100	913 327	532 234	185 927	(D)	-
1987 RELATIVE STANDARD ERROR OF ESTIMATE (PERCENT)										
All employees** -----	1	(S)	3	2	1	(W)	(W)	(W)	(D)	-
Net value of construction work† -----	1	(S)	3	2	1	(W)	(W)	(D)	(D)	-
Capital expenditures, other than land -----	2	(S)	8	6	3	2	(W)	(W)	(D)	-

Note: Underscored data fields include data from adjoining columns which have been withheld to avoid disclosing data for individual companies.

¹In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

Table 6. Selected Statistics by Size Class of the Dollar Value of Business Done for Establishments With Payroll: 1987 and 1982

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Selected statistics	Total	Establishments with dollar value of business done									
		Less than \$25,000	\$25,000 to \$49,999	\$50,000 to \$99,999	\$100,000 to \$249,999	\$250,000 to \$499,999	\$500,000 to \$999,999	\$1,000,000 to \$2,499,999	\$2,500,000 to \$4,999,999	\$5,000,000 to \$9,999,999	\$10,000,000 or more
1987											
Number of establishments -----	25 673	(S)	(S)	(S)	(S)	4 392	3 017	2 460	862	254	98
All employees** -----	231 137	(S)	(S)	(S)	(S)	30 330	34 941	54 850	37 169	18 438	14 830
Payroll, all employees -----	4 313 694	(S)	(S)	(S)	(S)	421 922	594 723	1 079 122	885 428	499 850	424 691
Construction worker hours (thousands) -----	293 990	(S)	(S)	(S)	(S)	35 340	41 762	72 647	51 860	26 317	21 059
Dollar value of business done -----	15 258 891	(S)	(S)	(S)	(S)	1 543 530	2 110 821	3 795 324	2 975 371	1 707 054	1 473 360
Value of construction work ¹ -----	15 027 806	(S)	(S)	(S)	(S)	1 526 858	2 085 876	3 743 300	2 932 980	1 666 389	1 435 145
Net value of construction work† -----	14 182 802	(S)	(S)	(S)	(S)	1 445 035	1 967 874	3 525 749	2 783 728	1 576 746	1 318 448
Value added†† -----	8 524 431	(S)	(S)	(S)	(S)	851 023	1 160 978	2 117 470	1 692 946	940 121	852 563
Cost of materials, components, supplies, and fuels -----	5 889 456	(S)	(S)	(S)	(S)	610 683	831 840	1 460 303	1 133 173	677 290	504 100
Cost of construction work subcontracted to others -----	845 003	(S)	(S)	(S)	(S)	81 823	118 002	217 550	149 252	89 643	116 697
Rental cost for machinery, equipment, and buildings -----	215 477	(S)	(S)	(S)	(S)	22 171	35 170	51 887	40 854	23 394	17 545
Capital expenditures, other than land -----	249 240	(S)	(S)	(S)	(S)	31 789	36 262	65 985	39 648	19 118	18 729
End-of-year gross book value of depreciable assets -----	1 806 667	(S)	(S)	(S)	(S)	220 526	256 026	480 762	329 266	150 729	137 800
1982											
All employees** -----	191 489	3 140	4 070	8 652	24 265	25 847	31 069	40 590	26 207	17 398	10 248
Total construction receipts ¹ -----	9 836 510	30 483	81 770	250 155	854 466	1 050 409	1 469 350	2 291 591	1 735 813	1 220 742	851 730
Value added†† -----	5 459 875	16 475	37 173	133 141	447 042	572 346	803 950	1 253 435	986 548	698 904	510 857
1987 RELATIVE STANDARD ERROR OF ESTIMATE (PERCENT)											
All employees** -----	1	(S)	(S)	(S)	(S)	3	3	1	1	(W)	(W)
Net value of construction work† -----	1	(S)	(S)	(S)	(S)	3	3	2	1	1	(W)
Capital expenditures, other than land -----	2	(S)	(S)	(S)	(S)	8	7	5	3	2	(W)

Note: Underscored data fields include data from adjoining columns which have been withheld to avoid disclosing data for individual companies.

¹In earlier censuses construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

Table 7. Value of Construction Work for Establishments With Payroll by Type of Construction: 1987 and 1982

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Type of construction	Value of construction work ¹				Relative standard error of estimate (percent) for column—			
	Total	New construction	Additions, alterations, or reconstruction ²	Maintenance and repair				
	A	B	C	D	A	B	C	D
1987								
Value of construction work ¹	15 027 806	5 870 711	4 796 373	3 629 887	1	1	1	1
Building construction	14 079 526	5 768 140	4 745 480	3 565 906	1	1	1	1
Single-family houses	4 000 304	1 504 500	1 383 447	1 112 357	2	2	2	3
Single-family houses, detached	3 385 622	1 207 919	1 243 633	934 069	2	3	3	3
Single-family houses, attached	614 682	296 581	139 814	178 287	3	4	6	6
Apartment buildings with two or more apartments	616 429	236 558	182 354	197 516	2	5	3	3
Other residential buildings, including hotels and motels	427 892	201 902	121 717	104 272	3	3	5	5
Hotels and motels	252 300	152 337	55 088	44 874	2	2	3	4
Other residential buildings, excluding hotels and motels	175 592	49 565	66 629	59 398	7	9	9	9
Office buildings	1 644 814	908 281	457 550	278 982	1	2	2	2
Other commercial buildings such as stores, restaurants, and automobile service stations	1 829 764	792 750	580 525	456 489	1	2	2	3
Industrial buildings and warehouses	3 370 775	1 392 993	1 115 051	862 730	1	1	1	2
Industrial buildings	2 616 099	1 057 834	881 172	677 093	1	1	2	2
Warehouses	754 676	335 159	233 879	185 637	2	3	2	3
Religious buildings	293 639	83 610	117 819	92 209	2	3	4	3
Educational buildings	1 070 234	330 933	472 306	266 994	2	2	2	3
Hospitals and institutional buildings	570 190	215 894	231 394	122 901	1	2	2	4
Amusement, social, and recreational buildings	77 910	29 903	29 216	18 790	4	5	6	12
Other nonresidential buildings	177 575	70 816	54 101	52 666	7	13	4	8
Nonbuilding construction	217 446	102 571	50 893	63 981	5	5	6	13
Construction work, n.s.k.	730 834	(NA)	(NA)	(NA)	4	(NA)	(NA)	(NA)
1982								
Value of construction work ¹	9 836 510	4 917 853	(NA)	4 918 656	1	1	(NA)	1
Building construction	8 801 103	4 268 941	(NA)	4 532 162	1	1	(NA)	1
Single-family houses	1 961 503	759 985	(NA)	1 201 517	1	2	(NA)	2
Single-family houses, detached	1 688 604	626 315	(NA)	1 062 288	2	2	(NA)	2
Single-family houses, attached	272 898	133 670	(NA)	139 228	3	3	(NA)	5
Apartment buildings with two or more apartments	419 517	171 539	(NA)	247 978	2	3	(NA)	3
Other residential buildings, including hotels and motels	202 069	111 525	(NA)	90 544	2	4	(NA)	3
Hotels and motels	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Other residential buildings, excluding hotels and motels	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)	(NA)
Office buildings	1 297 641	805 155	(NA)	492 486	1	1	(NA)	1
Other commercial buildings such as stores, restaurants, and automobile service stations	830 051	401 946	(NA)	428 104	2	2	(NA)	2
Industrial buildings and warehouses	2 534 002	1 276 466	(NA)	1 257 536	1	1	(NA)	1
Industrial buildings	2 023 631	1 006 399	(NA)	1 017 232	1	1	(NA)	1
Warehouses	510 371	270 067	(NA)	240 304	1	2	(NA)	1
Religious buildings	197 461	80 505	(NA)	116 956	2	3	(NA)	2
Educational buildings	742 974	305 923	(NA)	437 051	1	1	(NA)	2
Hospitals and institutional buildings	458 917	279 883	(NA)	179 034	1	1	(NA)	1
Amusement, social, and recreational buildings	65 796	41 039	(NA)	24 756	4	5	(NA)	4
Other nonresidential buildings	91 166	34 971	(NA)	56 194	5	6	(NA)	6
Nonbuilding construction	177 510	151 104	(NA)	26 405	2	2	(NA)	5
Construction work, n.s.k.	857 896	497 807	(NA)	360 088	3	3	(NA)	3

¹In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.
²In 1982, data for additions, alterations, or reconstruction were collected separately for SIC 1521, 1522, 1531, 1541, and 1542. For all other industries, data are included with "New construction."

Table 8. Selected Statistics for Establishments With Payroll by Specialization in Types of Construction: 1987

[Thousand dollars. Detail may not add to total due to rounding. This table presents selected statistics for establishments according to degree of specialization in major types of construction work. If number of establishments or value of construction work for a given type of specialization are relatively insignificant, data may not be shown. In addition, data are not shown in this table where distribution of the value of construction work by type of construction was not provided in table 7. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Number of establishments	All employees**	Payroll, all employees	Value of construction work		Net value of construction work†	Value added††	Cost of construction work sub-contracted to others	Relative standard error of estimate (percent) for column—		
				For all types	For specialized type				B	D	H
All establishments -----	25 673	231 137	4 313 694	15 027 806	6 715 405	14 182 802	8 524 431	845 003	1	1	2
Establishments not specializing by type -----	7 106	100 692	2 024 369	6 844 902	(NA)	6 524 819	3 952 805	320 082	1	1	3
Establishments specializing 51 percent or more -----	18 567	130 444	2 289 325	8 182 903	6 715 405	7 657 983	4 571 626	524 920	1	1	3
SINGLE-FAMILY HOUSES, DETACHED											
All establishments specializing in type -----	10 558	53 612	760 399	3 126 608	2 626 852	2 905 275	1 615 640	221 333	2	2	5
Establishments with —											
100 percent specialization -----	4 185	15 391	198 524	870 393	870 393	793 784	445 396	76 609	4	4	8
90 to 99 percent specialization -----	2 331	10 627	143 469	608 585	569 360	563 902	305 966	44 682	5	5	10
80 to 89 percent specialization -----	1 539	8 214	124 568	513 445	420 979	477 082	262 058	36 363	5	6	18
70 to 79 percent specialization -----	1 224	10 375	157 371	625 951	459 150	589 441	315 558	36 510	5	5	12
60 to 69 percent specialization -----	988	6 850	102 517	390 077	241 654	369 920	212 526	20 156	6	5	11
51 to 59 percent specialization -----	287	2 152	33 948	118 155	65 314	111 144	74 134	7 011	11	10	18
SINGLE-FAMILY HOUSES, ATTACHED											
All establishments specializing in type -----	749	4 010	64 194	244 185	195 590	222 962	132 019	21 222	8	7	14
Establishments with —											
100 percent specialization -----	284	991	9 301	36 640	36 640	34 035	18 405	*2 605	21	20	58
90 to 99 percent specialization -----	163	1 028	21 018	78 153	72 261	71 176	45 290	6 977	13	14	26
80 to 89 percent specialization -----	65	411	6 508	32 659	26 501	28 312	14 561	4 347	22	20	15
70 to 79 percent specialization -----	78	540	7 715	25 860	18 825	23 523	14 075	2 337	21	22	33
60 to 69 percent specialization -----	117	595	9 113	39 385	24 442	37 296	22 131	*2 088	17	19	44
51 to 59 percent specialization -----	39	443	10 538	31 486	16 918	28 619	17 555	*2 867	15	18	42
APARTMENT BUILDINGS WITH TWO OR MORE APARTMENTS											
All establishments specializing in type -----	357	2 293	37 321	119 177	96 658	110 144	69 071	9 032	10	10	21
Establishments with —											
100 percent specialization -----	56	625	11 155	37 243	37 243	35 140	23 508	*2 102	19	22	71
90 to 99 percent specialization -----	38	262	4 191	14 068	12 970	13 663	7 806	*405	27	29	41
80 to 89 percent specialization -----	86	224	3 965	9 563	7 826	8 987	5 533	(S)	28	31	(S)
70 to 79 percent specialization -----	88	634	9 606	28 823	20 761	26 523	17 480	2 300	20	18	17
60 to 69 percent specialization -----	82	496	7 291	25 170	15 488	22 086	12 307	3 084	20	17	28
51 to 59 percent specialization -----	*5	*49	*1 111	*4 308	*2 369	*3 743	*2 434	(S)	47	57	(S)
OTHER RESIDENTIAL BUILDINGS, EXCLUDING HOTELS AND MOTELS											
All establishments specializing in type -----	221	1 329	16 590	76 414	65 648	65 836	35 245	10 578	16	16	31
Establishments with —											
100 percent specialization -----	121	549	6 099	26 589	26 589	23 700	13 332	*2 889	25	24	58
90 to 99 percent specialization -----	37	*208	2 656	*12 198	11 334	11 494	*5 648	(S)	43	46	(S)
80 to 89 percent specialization -----	*22	267	4 832	23 783	19 242	17 624	8 082	*6 158	31	32	43
70 to 79 percent specialization -----	*18	*151	*917	*3 271	*2 290	*3 059	*1 775	(S)	60	64	(S)
60 to 69 percent specialization -----	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(S)	(D)	(D)	(D)
51 to 59 percent specialization -----	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
OFFICE BUILDINGS											
All establishments specializing in type -----	467	8 967	241 606	696 002	518 385	637 152	436 397	58 850	3	3	11
Establishments with —											
100 percent specialization -----	126	1 290	34 160	97 994	97 994	92 798	63 559	*5 195	10	11	46
90 to 99 percent specialization -----	31	938	23 715	65 058	59 978	(D)	42 018	(D)	9	9	(D)
80 to 89 percent specialization -----	79	1 254	33 673	102 397	83 264	91 525	57 882	*10 872	8	14	51
70 to 79 percent specialization -----	110	1 953	59 758	173 780	124 418	157 112	108 146	16 668	5	3	2
60 to 69 percent specialization -----	92	2 655	69 562	198 242	121 811	183 295	129 460	14 947	4	6	8
51 to 59 percent specialization -----	27	875	20 735	58 528	30 917	(D)	35 328	(D)	10	5	(D)
OTHER COMMERCIAL BUILDINGS SUCH AS STORES, RESTAURANTS, AND AUTOMOBILE SERVICE STATIONS											
All establishments specializing in type -----	1 499	12 644	216 556	758 160	609 707	717 975	433 424	40 185	4	3	7
Establishments with —											
100 percent specialization -----	462	3 428	68 168	249 237	249 237	230 485	134 904	18 752	7	5	9
90 to 99 percent specialization -----	185	1 450	24 834	83 346	76 793	79 794	49 102	3 551	10	9	12
80 to 89 percent specialization -----	274	1 665	25 099	94 948	77 427	90 648	55 257	4 299	11	9	20
70 to 79 percent specialization -----	204	1 697	26 200	94 836	68 699	90 756	53 792	4 080	13	12	34
60 to 69 percent specialization -----	295	2 837	44 684	135 492	83 083	131 519	85 043	3 973	8	7	7
51 to 59 percent specialization -----	77	1 564	27 568	100 300	54 465	94 770	55 323	5 529	9	10	31
INDUSTRIAL BUILDINGS											
All establishments specializing in type -----	1 470	24 124	555 386	1 702 226	1 316 801	1 606 696	1 041 186	95 530	2	2	3
Establishments with —											
100 percent specialization -----	397	5 213	116 187	386 568	386 568	352 543	228 437	34 025	6	4	5
90 to 99 percent specialization -----	151	2 525	60 336	163 992	152 981	156 469	106 010	7 523	6	5	4
80 to 89 percent specialization -----	135	2 316	52 569	193 706	158 001	182 167	121 482	11 539	7	8	9
70 to 79 percent specialization -----	250	4 369	111 135	329 980	243 769	310 267	199 200	19 712	5	5	8
60 to 69 percent specialization -----	378	6 363	145 407	429 106	266 217	412 249	259 098	16 857	4	3	5
51 to 59 percent specialization -----	156	3 335	69 751	198 872	109 263	193 001	126 956	5 871	7	5	11

Table 8. Selected Statistics for Establishments With Payroll by Specialization in Types of Construction: 1987—Con.

[Thousand dollars. Detail may not add to total due to rounding. This table presents selected statistics for establishments according to degree of specialization in major types of construction work. If number of establishments or value of construction work for a given type of specialization are relatively insignificant, data may not be shown. In addition, data are not shown in this table where distribution of the value of construction work by type of construction was not provided in table 7. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Number of establishments	All employees**	Payroll, all employees	Value of construction work		Net value of construction work†	Value added††	Cost of construction work sub-contracted to others	Relative standard error of estimate (percent) for column—		
				For all types	For specialized type				B	D	H
A	B	C	D	E	F	G	H	B	D	H	
WAREHOUSES											
All establishments specializing in type -----	80	1 735	32 025	118 337	91 605	114 449	56 728	3 888	10	8	6
Establishments with —											
100 percent specialization -----	17	442	5 656	19 352	19 352	(D)	10 415	(D)	30	31	(D)
90 to 99 percent specialization -----	*6	*109	*1 267	*5 065	*4 723	*4 913	*2 270	*151	49	50	56
80 to 89 percent specialization -----	12	471	10 402	45 157	37 139	44 046	19 681	1 111	12	8	9
70 to 79 percent specialization -----	20	267	6 094	14 189	10 197	(D)	6 120	(D)	31	31	(D)
60 to 69 percent specialization -----	*18	307	4 519	20 852	12 557	20 335	10 268	516	13	20	34
51 to 59 percent specialization -----	5	136	4 086	13 721	7 634	13 242	7 970	479	(W)	(W)	(W)
RELIGIOUS BUILDINGS											
All establishments speciallzing in type -----	60	468	9 336	31 157	22 861	29 750	19 741	1 407	20	19	32
Establishments with —											
100 percent specialization -----	*5	*48	*890	*2 599	*2 599	(D)	*2 044	(D)	57	47	(D)
90 to 99 percent specialization -----	-	-	-	-	-	-	-	-	-	-	-
80 to 89 percent specialization -----	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
70 to 79 percent specialization -----	30	108	1 592	5 835	4 333	5 790	3 581	45	40	35	22
60 to 69 percent specialization -----	*18	162	2 155	7 633	4 642	(D)	4 253	(D)	35	20	(D)
51 to 59 percent specialization -----	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
EDUCATIONAL BUILDINGS											
All establishments speciallzing in type -----	359	3 782	75 159	280 391	197 268	265 730	157 700	14 661	6	6	7
Establishments with —											
100 percent specialization -----	*15	*71	*1 287	*6 285	*6 285	*5 895	*2 811	*390	56	59	59
90 to 99 percent specialization -----	39	345	5 772	21 979	20 207	20 804	12 670	1 174	28	27	37
80 to 89 percent specialization -----	42	400	7 588	28 116	22 948	25 993	15 262	2 122	15	17	8
70 to 79 percent specialization -----	155	1 241	24 679	88 089	64 795	84 915	45 296	3 173	12	12	23
60 to 69 percent specialization -----	84	1 191	25 117	97 372	61 652	91 648	60 769	5 724	9	8	7
51 to 59 percent specialization -----	22	532	10 714	38 548	21 377	36 473	20 890	2 075	8	7	8
HOSPITALS AND INSTITUTIONAL BUILDINGS											
All establishments speciallzing in type -----	111	1 409	31 933	93 156	70 069	88 488	54 701	4 668	7	6	6
Establishments with —											
100 percent specialization -----	17	226	4 577	10 176	10 176	9 680	7 143	496	24	24	27
90 to 99 percent specialization -----	*10	200	4 961	15 451	13 906	13 299	6 051	2 151	12	11	8
80 to 89 percent specialization -----	55	299	4 179	18 229	14 791	17 897	10 000	*331	24	22	41
70 to 79 percent specialization -----	9	285	7 689	19 204	13 809	19 128	11 927	*75	6	6	71
60 to 69 percent specialization -----	*11	226	6 498	16 715	10 130	16 366	11 816	348	14	16	1
51 to 59 percent specialization -----	6	170	4 027	13 380	7 256	12 116	7 761	1 264	14	11	12

Table 9. Quarterly Construction Worker Hours and Employment for Establishments With

[Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Location of establishment	Number of establishments	Average number of construction workers	Construction worker hours (thousands)	January to March		April to June	
				Construction workers ¹	Hours worked (thousands)	Construction workers ¹	Hours worked (thousands)
	A	B	C	D	E	F	G
United States	25 673	186 916	293 990	168 096	62 867	186 686	73 612
Alabama	315	2 175	3 012	2 110	700	2 188	764
Alaska	32	176	266	153	46	175	62
Arizona	389	3 782	4 991	3 645	1 136	3 800	1 253
Arkansas	204	1 310	2 335	1 414	592	1 423	605
California	2 625	22 173	33 192	21 042	7 535	21 453	8 068
Colorado	383	2 913	4 778	2 675	984	2 776	1 144
Connecticut	419	2 844	4 345	2 274	828	2 932	1 090
Delaware	92	645	1 050	600	225	636	271
District of Columbia	*14	478	697	453	157	454	164
Florida	1 878	14 529	23 038	14 136	5 413	14 888	5 906
Georgia	547	5 074	7 968	4 987	1 858	5 070	2 081
Hawaii	86	774	1 130	733	247	816	330
Idaho	119	801	1 089	683	220	766	248
Illinois	1 097	8 586	13 579	7 264	2 834	8 749	3 462
Indiana	510	4 086	6 238	3 399	1 265	4 099	1 506
Iowa	246	1 883	3 222	1 617	623	1 863	781
Kansas	281	1 911	2 811	1 738	597	1 898	700
Kentucky	317	2 165	3 336	2 020	724	2 087	796
Louisiana	306	2 379	3 803	2 400	910	2 370	954
Maine	120	777	1 544	707	329	855	417
Maryland	612	5 395	8 828	4 977	1 891	5 397	2 280
Massachusetts	724	4 991	7 732	4 056	1 446	5 130	1 904
Michigan	773	6 055	9 996	5 025	2 008	6 026	2 459
Minnesota	381	2 687	4 346	2 182	907	2 825	1 077
Mississippi	208	1 156	1 618	1 168	363	1 067	386
Missouri	585	4 354	6 826	4 141	1 571	4 231	1 623
Montana	62	269	380	230	62	220	84
Nebraska	161	1 104	1 826	886	347	1 039	446
Nevada	101	931	1 342	873	285	981	375
New Hampshire	154	927	1 772	815	367	991	489
New Jersey	1 207	7 186	11 697	6 148	2 274	7 016	2 903
New Mexico	141	1 250	1 936	1 157	430	1 192	484
New York	1 792	11 770	18 744	9 510	3 655	12 063	4 807
North Carolina	746	5 142	8 225	5 032	1 800	5 216	2 170
North Dakota	67	381	614	266	85	365	145
Ohio	1 303	7 916	12 900	6 024	2 368	7 788	3 131
Oklahoma	248	1 718	2 525	1 772	555	1 756	668
Oregon	354	2 124	2 877	1 867	623	1 971	674
Pennsylvania	1 396	8 761	13 699	7 504	2 785	8 769	3 424
Rhode Island	155	755	1 307	627	260	753	333
South Carolina	305	2 203	3 794	2 313	1 021	2 332	1 036
South Dakota	59	373	668	320	132	406	186
Tennessee	432	3 492	5 583	3 280	1 247	3 497	1 408
Texas	1 432	10 682	17 282	10 413	3 992	10 528	4 244
Utah	162	1 228	2 112	1 060	411	1 145	480
Vermont	67	543	978	497	200	539	248
Virginia	685	5 836	9 483	5 415	2 140	5 881	2 431
Washington	616	3 651	5 448	3 086	1 127	3 595	1 386
West Virginia	94	783	1 003	603	200	783	244
Wisconsin	595	3 429	5 498	2 512	986	3 529	1 338
Wyoming	55	336	504	264	80	333	121

¹Construction workers during pay periods including 12th of March, May, August, and November.

Payroll by State: 1987

July to September		October to December		Relative standard error of estimate (percent) for column—										Location of establishment
Construction workers¹	Hours worked (thousands)	Construction workers¹	Hours worked (thousands)											
H	I	J	K	B	C	D	E	F	G	H	I	J	K	
202 798	82 076	190 106	75 434	1	1	1	1	1	1	1	1	1	1	U.S.
2 323	841	2 078	705	7	9	7	8	7	8	8	11	8	11	AL
235	90	144	67	10	13	11	13	11	11	14	14	9	18	AK
3 914	1 317	3 769	1 284	4	4	4	5	5	5	4	4	4	5	AZ
1 256	593	1 149	544	8	11	9	12	9	12	9	12	9	12	AR
22 831	8 801	23 366	8 786	2	2	2	3	2	3	2	3	2	3	CA
3 291	1 458	2 911	1 190	7	10	7	10	6	10	8	12	8	11	CO
3 214	1 294	2 958	1 131	5	6	5	6	4	5	5	6	5	7	CT
659	260	686	292	9	7	9	9	9	9	11	9	11	7	DE
503	184	501	191	4	5	4	4	4	5	3	4	4	6	DC
14 775	5 940	14 319	5 778	3	3	3	4	3	4	3	4	3	4	FL
5 100	2 039	5 138	1 988	4	4	4	5	4	5	4	5	4	5	GA
781	274	765	278	6	8	9	13	14	21	6	7	6	5	HI
926	323	831	297	14	20	16	22	15	22	13	18	16	23	ID
9 653	3 952	8 678	3 330	2	3	2	4	3	3	2	3	2	3	IL
4 625	1 762	4 228	1 703	4	4	4	5	5	5	4	5	4	4	IN
2 087	958	1 966	859	5	7	6	8	7	9	6	8	5	7	IA
2 089	787	1 920	725	4	5	4	6	5	6	5	5	5	8	KS
2 320	908	2 231	907	6	8	6	9	6	10	7	8	5	8	KY
2 598	1 080	2 148	857	9	6	8	9	8	6	10	7	9	7	LA
777	409	769	387	7	9	8	10	7	10	8	10	6	8	ME
5 648	2 429	5 556	2 226	4	4	4	4	4	4	4	4	4	5	MD
5 707	2 295	5 076	2 085	5	5	5	6	7	5	5	6	4	5	MA
6 731	2 920	6 439	2 606	3	3	3	4	3	4	3	4	3	4	MI
2 992	1 268	2 749	1 093	4	6	5	7	5	6	4	5	6	8	MN
1 196	438	1 192	429	8	11	10	12	8	11	8	11	9	11	MS
4 732	1 875	4 312	1 755	4	5	4	5	4	5	4	5	4	5	MO
332	136	295	96	7	9	12	18	7	11	9	14	8	10	MT
1 286	536	1 205	495	8	11	10	12	9	12	8	10	8	10	NE
1 011	350	859	330	10	17	9	13	10	17	12	19	11	20	NV
1 013	467	887	448	9	12	12	14	10	15	9	11	9	10	NH
8 054	3 404	7 526	3 114	3	4	3	4	3	4	3	4	3	4	NJ
1 379	530	1 273	492	7	10	6	10	6	10	7	9	8	11	NM
13 284	5 368	12 230	4 912	2	3	2	3	2	3	2	3	2	3	NY
5 344	2 224	4 978	2 029	4	5	4	5	4	5	4	5	4	5	NC
461	191	433	192	7	13	13	17	7	13	8	12	7	14	ND
9 089	3 817	8 764	3 582	3	4	3	4	3	4	3	4	3	4	OH
1 757	708	1 588	593	7	10	7	9	8	10	8	11	8	10	OK
2 516	854	2 143	725	7	9	11	11	8	9	8	10	8	10	OR
9 996	4 028	8 775	3 461	3	3	3	4	3	4	3	4	3	4	PA
836	370	805	342	9	9	10	8	9	9	11	10	10	8	RI
2 132	910	2 034	826	6	9	7	11	7	11	6	7	5	6	SC
423	186	344	163	12	17	16	22	11	17	11	14	12	18	SD
3 665	1 498	3 527	1 428	4	6	5	8	4	6	4	6	5	7	TN
11 637	4 880	10 151	4 164	3	4	3	4	3	4	3	4	3	4	TX
1 327	618	1 380	602	6	10	5	8	6	8	7	13	8	14	UT
598	285	537	244	6	11	7	9	7	11	9	15	9	15	VT
6 129	2 500	5 921	2 410	4	5	4	5	4	5	4	5	4	5	VA
4 230	1 580	3 693	1 353	5	5	5	7	5	7	5	6	6	6	WA
891	289	856	269	7	10	8	10	8	11	8	12	6	8	WV
4 038	1 662	3 639	1 510	4	5	5	6	4	5	4	5	5	7	WI
390	165	358	137	19	23	21	18	24	35	19	24	21	23	WY

Table 10. Value of Construction Work for Establishments With Payroll by Location of Construction Work: 1987 and 1982

[Thousand dollars. Detail may not add to total due to rounding. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Location of construction work	1987					1982 construction receipts for work done in this State ¹	Percent change 1987 (col A) to 1982 (col F)	Relative standard error of estimate (percent) for column—		
	Value of construction work done in this State ¹	Construction work done by establishments located in this State		Construction work done by establishments not located in this State						
		Number	Value of construction work	Number	Value of construction work					
A	B	C	D	E	F	G	A	C	E	
United States	15 027 806	25 513	13 809 470	6 250	1 218 335	9 836 510	52.8	1	1	2
Alabama	140 086	314	119 426	174	20 660	102 604	36.5	6	6	11
Alaska	28 075	32	27 073	5	1 001	44 273	-36.6	5	5	(W)
Arizona	256 718	388	253 793	31	2 925	162 221	58.3	4	4	18
Arkansas	83 900	201	71 415	57	12 485	75 314	11.4	7	7	14
California	1 908 539	2 623	1 871 130	71	37 409	1 030 175	85.3	1	1	2
Colorado	212 809	383	200 136	76	12 673	210 904	.9	5	6	22
Connecticut	266 842	411	243 185	121	23 656	138 111	93.2	4	5	8
Delaware	77 175	92	48 795	105	28 380	36 538	111.2	10	15	8
District of Columbia	76 274	14	30 870	155	45 403	63 140	20.8	4	4	6
Florida	1 025 914	1 856	971 271	159	54 643	671 520	52.8	3	3	8
Georgia	356 850	541	312 439	213	44 410	211 957	68.4	5	5	6
Hawaii	83 821	86	78 143	26	5 677	58 848	42.4	4	3	28
Idaho	51 739	116	47 622	85	4 116	35 464	45.9	11	12	24
Illinois	874 539	1 097	802 524	307	72 015	633 220	38.1	2	2	10
Indiana	308 141	494	286 882	163	21 259	234 166	31.6	3	3	3
Iowa	144 861	246	135 761	88	9 100	122 984	17.8	7	7	21
Kansas	163 496	281	115 214	215	48 281	84 560	93.3	4	5	7
Kentucky	183 567	317	133 658	247	49 908	103 909	76.7	4	6	3
Louisiana	161 486	306	150 006	89	11 480	165 887	-2.7	5	6	8
Maine	64 406	120	59 704	30	4 701	39 741	62.1	6	6	8
Maryland	365 453	612	310 974	178	54 478	173 396	110.8	4	4	5
Massachusetts	460 931	716	419 287	138	41 644	245 267	87.9	3	4	10
Michigan	568 358	772	546 057	150	22 300	387 743	46.6	3	3	7
Minnesota	269 609	365	256 735	114	12 873	191 390	40.9	4	4	13
Mississippi	86 413	205	66 307	94	20 106	52 398	64.9	7	8	13
Missouri	339 322	584	304 175	173	35 146	217 049	56.3	5	5	7
Montana	26 770	62	25 984	42	*785	30 362	-11.8	8	8	41
Nebraska	77 953	159	72 576	40	5 376	82 279	-5.3	8	8	13
Nevada	77 950	101	70 300	46	7 650	47 827	63.0	9	10	9
New Hampshire	80 759	154	67 885	167	12 873	33 675	139.8	8	8	17
New Jersey	712 434	1 207	651 003	268	61 431	297 352	139.6	4	4	4
New Mexico	93 825	141	88 067	36	5 757	58 564	60.2	12	13	4
New York	1 039 527	1 778	985 526	232	54 001	621 426	67.3	2	2	4
North Carolina	324 812	741	287 313	166	37 498	186 296	74.4	3	4	9
North Dakota	33 377	67	30 296	9	3 081	37 067	-10.0	8	8	30
Ohio	654 988	1 295	625 020	190	29 967	441 819	48.2	3	3	11
Oklahoma	123 506	248	112 804	54	10 702	134 915	-8.5	6	6	12
Oregon	155 859	353	142 571	81	13 288	79 693	95.6	6	6	15
Pennsylvania	679 057	1 391	622 209	267	56 847	478 655	41.9	2	3	7
Rhode Island	59 967	155	50 680	53	9 286	34 434	74.2	8	9	5
South Carolina	142 220	305	112 201	152	30 018	90 321	57.5	5	6	7
South Dakota	28 425	59	26 671	20	1 754	16 450	72.8	8	8	1
Tennessee	263 997	422	224 448	253	39 549	172 081	53.4	6	6	10
Texas	685 075	1 427	654 150	106	30 925	709 641	-3.5	3	3	17
Utah	100 368	162	95 393	54	4 975	59 891	67.6	6	6	33
Vermont	35 039	67	33 602	17	1 437	27 002	29.8	4	4	5
Virginia	400 818	685	337 483	259	63 335	223 547	79.3	3	4	6
Washington	320 484	615	307 203	101	13 281	238 672	34.3	4	4	23
West Virginia	55 042	86	42 127	201	12 915	39 481	39.4	4	5	7
Wisconsin	269 231	584	260 159	99	9 071	171 799	56.7	4	4	9
Wyoming	26 973	55	21 194	53	5 779	30 455	-11.4	12	11	35

¹In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

Table 11. Dollar Value of Business Done for Establishments With Payroll by Kind of Business Activity: 1987 and 1982

[Thousand dollars. Detail may not add to total due to rounding. Based on their primary business activity or combination of activities, establishments were classified into this specific industry. These establishments, however, may also be engaged in other kinds of business activities. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Primary and other kinds of business activities	Dollar value of business done ¹		Relative standard error of estimate (percent)	
	1987	1982	1987	1982
All kinds of business.....	15 258 891	10 033 533	1	1
General building contractor	29 361	12 895	7	5
Residential remodeling contractor	28 121	54 739	13	6
Air-conditioning contractor	25 991	113 604	10	2
Heating contractor	14 041	95 405	11	2
Mechanical contractor	32 925	(S)	4	(S)
Plumbing contractor	12 515	52 272	5	2
Refrigeration contractor	4 176	7 252	11	9
Heating, ventilation, and air-conditioning contractor	102 376	(NA)	4	(NA)
Painting construction	18 471	14 744	11	12
Masonry contractor	13 307	7 379	8	6
Acoustical contractor	3 294	14 072	(W)	4
Insulation contractor	31 626	73 843	10	4
Carpentry contractor	90 179	52 310	7	5
Floor covering contractor, except wood	6 064	4 005	5	11
Architectural sheet metal contractor	952 400	(NA)	2	(NA)
Roofing contractor	8 711 104	5 334 935	1	1
Sheet metal contractor	3 064 143	2 665 496	1	1
Siding contractor	1 130 220	678 458	4	3
Specialty sheet metal contractor	300 091	(NA)	6	(NA)
Concrete construction	8 306	(S)	10	(S)
Structural steel erection contractor	11 622	16 399	8	9
Glass and glazing contractor	6 109	11 423	19	15
Waterproofing, dampproofing and fireproofing contractor	33 442	52 848	9	2
Other construction activities	182 886	(S)	7	(S)
Manufacturing	70 295	24 433	2	3
Retail trade	62 552	36 843	7	4
Wholesale trade	38 240	24 921	4	7
Other activities	62 431	685 257	(W)	19
Kind of business activity, n.s.k.	212 603	(S)	6	(S)

¹In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

Table 12. Selected Industry Ratios for Establishments With Payroll: 1987 and 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Selected statistics			Relative standard error of estimate (percent) for 1987
	1987	1982	
AVERAGE PER ESTABLISHMENT			
Number of employees**.....	9.0	9.1	1
Number of construction workers.....	7.3	7.5	1
Number of all other employees.....	1.7	(NA)	1
Payroll, all employees..... \$1,000..	168.0	143.5	1
Payroll, construction workers..... do..	121.2	109.7	1
Payroll, other employees..... do..	46.8	33.8	1
Dollar value of business done..... do..	594.4	474.4	1
Value of construction work ¹ do..	585.4	465.0	1
Cost of materials, components, supplies, and fuels..... do..	229.4	191.6	1
Construction work subcontracted to others..... do..	32.9	24.6	2
Rental cost for machinery, equipment, and buildings..... do..	8.4	5.2	2
Capital expenditures, other than land..... do..	9.7	7.4	2
Gross book value of depreciable assets..... do..	70.4	65.9	1
AVERAGE PER EMPLOYEE			
Payroll, all employees..... do..	18.7	15.8	(W)
Dollar value of business done..... do..	66.0	52.4	1
Value added††..... do..	36.9	28.5	1
AVERAGE PER CONSTRUCTION WORKER			
Payroll, construction workers..... do..	16.6	14.6	(W)
Value of construction work ¹ do..	80.4	61.9	1
Construction worker hours.....	1 572.8	1 451.7	1
AVERAGE PER OTHER EMPLOYEE			
Payroll, other employees..... \$1,000..	27.2	(NA)	1
AVERAGE PER DOLLAR VALUE OF CONSTRUCTION WORK¹			
Payroll, all employees.....	.287	.309	(W)
Cost of materials, components, supplies, and fuels.....	.392	.412	(W)
Cost of construction work subcontracted to others.....	.056	.053	2
Rental cost for machinery, equipment, and buildings.....	.014	.011	2

¹In earlier censuses, construction receipts only were collected. In 1987, the value of construction work was collected to better measure actual construction activity done during the year.

Table 13. Selected Industry Ratios for Establishments With Payroll by State: 1987

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Location of establishment	Average number of employees** per establishment	Payroll per employee (\$1,000)	Construction worker hours per construction worker	Value of construction work per construction worker (\$1,000)	Average per dollar of value of construction work			
					Payroll, all employees	Cost of materials, components, supplies, and fuels	Cost of construction work sub-contracted to others	Rental cost for machinery, equipment, and buildings
United States	9.0	18.7	1 572.8	80.4	.287	.392	.056	.014
Alabama	8.4	14.5	1 384.8	65.2	.268	.386	.042	.007
Alaska	6.7	31.6	1 511.4	153.8	.251	(D)	.039	.009
Arizona	11.8	15.9	1 319.7	69.2	.280	(D)	.028	.010
Arkansas	7.9	15.5	1 782.4	67.9	.280	(D)	.051	.011
California	10.4	19.2	1 497.0	86.0	.275	.402	.030	.017
Colorado	9.3	16.0	1 640.2	72.1	.271	.402	.057	.017
Connecticut	8.4	22.8	1 527.8	97.3	.289	.345	.079	.016
Delaware	8.7	19.5	1 627.9	79.8	.303	(D)	.064	.014
District of Columbia	*37.6	28.7	1 458.2	72.5	.435	(D)	.029	(D)
Florida	9.5	14.8	1 585.7	69.4	.262	.427	.061	.015
Georgia	11.3	17.5	1 570.4	71.3	.297	.390	.068	.011
Hawaii	11.6	20.5	1 459.9	101.0	.261	.356	.050	.017
Idaho	8.3	14.6	1 359.6	71.8	.251	(D)	.029	.006
Illinois	9.9	22.7	1 581.5	96.5	.298	.354	.061	.012
Indiana	9.9	20.6	1 526.7	83.9	.304	.385	.057	.011
Iowa	9.7	18.8	1 711.1	89.9	.264	.425	.065	.017
Kansas	8.5	17.8	1 471.0	73.9	.301	.423	.049	.015
Kentucky	8.5	15.6	1 540.9	69.2	.279	.402	.071	.010
Louisiana	9.9	15.7	1 598.6	65.6	.306	.361	.051	.014
Maine	7.9	19.2	1 987.1	84.8	.275	.413	.043	.015
Maryland	10.6	18.6	1 636.3	70.7	.316	.358	.050	.015
Massachusetts	8.6	20.6	1 549.2	89.0	.291	.357	.084	.016
Michigan	9.9	22.2	1 650.9	100.5	.278	.391	.078	.013
Minnesota	9.1	22.3	1 617.4	100.8	.285	.422	.074	.015
Mississippi	6.9	15.3	1 399.7	72.1	.264	.485	.044	.012
Missouri	9.2	20.5	1 567.8	83.7	.304	.350	.074	.013
Montana	5.7	18.3	1 412.6	103.0	.235	(D)	.042	.010
Nebraska	8.8	16.9	1 654.0	77.9	.279	.425	.051	.014
Nevada	11.3	18.5	1 441.5	82.9	.274	.397	.022	.023
New Hampshire	7.4	21.5	1 911.5	86.3	.307	(D)	.081	.014
New Jersey	7.5	22.5	1 627.7	99.6	.283	.357	.067	.014
New Mexico	10.8	15.8	1 548.8	71.4	.269	.392	.041	.013
New York	8.1	22.8	1 592.5	89.2	.317	.366	.061	.014
North Carolina	8.4	14.0	1 599.6	60.5	.281	.424	.045	.014
North Dakota	7.3	17.3	1 611.5	91.2	.244	.492	.065	(D)
Ohio	7.5	20.0	1 629.6	85.5	.290	.392	.062	.014
Oklahoma	8.8	17.0	1 469.7	71.7	.300	.413	.061	.015
Oregon	7.6	15.0	1 354.5	72.1	.265	.404	.044	.021
Pennsylvania	7.8	18.7	1 563.6	82.9	.279	.381	.059	.015
Rhode Island	6.1	19.9	1 731.1	77.8	.321	.393	.055	.011
South Carolina	8.5	13.9	1 722.2	57.4	.285	.430	.054	.015
South Dakota	8.2	18.6	1 790.9	87.0	.277	(D)	.121	.007
Tennessee	9.8	17.2	1 598.8	71.2	.293	.439	.059	.010
Texas	9.3	15.9	1 617.9	64.9	.305	.396	.062	.017
Utah	9.3	16.7	1 719.9	81.7	.250	.477	.036	.011
Vermont	9.5	18.1	1 801.1	75.5	.281	.402	.049	.013
Virginia	10.3	16.4	1 624.9	64.7	.306	.408	.054	.014
Washington	7.3	18.6	1 492.2	88.6	.258	.403	.055	.016
West Virginia	9.9	20.1	1 281.0	71.5	.336	.398	.019	.010
Wisconsin	7.3	18.5	1 603.4	82.9	.280	.424	.044	.015
Wyoming	7.6	14.0	1 500.0	63.3	.274	.419	.062	.017

APPENDIX A.

Explanation of Terms

Construction—Is composed of three broad categories:

1. **New construction**—Includes the complete, original erection of structures and essential service facilities and the initial installation of integral equipment such as elevators, and plumbing, heating, and air-conditioning supplies and equipment.
2. **Additions, alterations or reconstruction**—Includes construction activity making structural changes to existing facilities. Generally, this type of activity is considered a capital investment in the property.
3. **Maintenance and repair**—Includes construction done for the purpose of upkeep of property rather than additional investment in the property.

Examples of the general distinction between maintenance and repair and reconstruction are provided here: roof repairs, including the replacement of shingles, gutters, etc., are classified under maintenance and repairs. A complete reroofing, however, is classified as reconstruction.

Number of establishments in business during year—Includes all establishments that were in business at any time during the year. It covers all full-year and part-year operations. Construction establishments which were inactive or idle for the entire year were not included.

Proprietors and working partners—These data were not collected on the census report forms. The data shown are based on crediting each sole proprietorship establishment with one active proprietor and each partnership establishment with two working partners.

All employees—Comprise all full-time and part-time employees on the payrolls of construction establishments, who worked or received pay for any part of the pay period including the 12th of March, May, August, and November. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included, but proprietors and partners of unincorporated firms are not.

All employees is the sum of all employees during the pay periods including the 12th of March, May, August, and November, divided by 4.

Construction workers—Includes all workers up through the working foreman level directly engaged in construction operations, such as painters, carpenters, plumbers, and electricians. Included are journeymen, mechanics, apprentices, laborers, truck drivers and helpers, equipment

operators, and on-site record keepers and security guards. Supervisory employees above the working foreman level are excluded from this category but are included in the "other employees" category.

Other employees—Includes employees in executive, purchasing, accounting, personnel, professional, technical activities, and routine office functions. Also included are supervisory employees above the working foreman level.

Construction worker hours—Includes the total number of hours worked by construction workers. Construction worker hours were collected for each of the four quarters of 1987.

Payroll—Includes the gross earnings paid in the calendar year 1987 to all employees on the payroll of construction establishments. It includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of these establishments, if a corporation, but excludes payments to the proprietor or partners, if an unincorporated concern.

Employer costs for fringe benefits (supplemental labor costs)—Represents expenditures made by the employer during 1987 for legally required and voluntary fringe benefit programs for employees.

Legally required contributions—Include Social Security contributions, unemployment compensation, workman's compensation, and State temporary disability payments.

Voluntary payments—Include life insurance premiums, pension plans, insurance premiums on hospital and medical plans, welfare plans, and union negotiated benefits.

Dollar value of business done comprises the following detail:

Value of construction work done—Includes all value of construction work done during 1987 for construction work performed by general contractors, special trades contractors, subcontractors, and land development and improvement work. Included is new construction, additions and alterations or reconstruction, and maintenance and repair construction work. Also included is the value of any construction work done by the reporting establishments for themselves.

Builders were instructed to include the value of buildings and other structures built or being built for sale in 1987 but not sold. They were to include the costs of such construction plus normal profit. Also included is the cost of construction work done on buildings for rent or lease.

Establishments engaged in the sale and installation of such construction components as plumbing, heating, and central air conditioning supplies and equipment; lumber and building materials; paint, glass, and wallpaper; and electrical and wiring supplies, elevators or escalators, etc., were instructed to include both the value for the installation and the receipts covering the price of the items installed.

Excluded was the cost of industrial and other specialized machinery and equipment which are not an integral part of a structure.

Land receipts—Includes receipts from the sale of land, whether held for sale or sold in connection with the sale of houses and other structures. It excludes the value of any improvements made to the land prior to the sale. (That value was to be included in the value of construction work done.)

Other business receipts—Includes business receipts not reported as value of construction work done or land receipts. The item includes business receipts from retail and wholesale trade, rental of equipment, manufacturing, transportation, legal service, insurance, finance, rental of property and other real estate operations, and other nonconstruction activities. Receipts for separately definable architectural and engineering work for others are also included here.

Excluded was the value of construction work done and receipts from other business operations in foreign countries and non-operating income such as interest and dividends.

Net value of construction work—Derived for each establishment by subtracting the costs for construction work subcontracted to others from the value of construction work done. (For a further explanation see "Duplication in Value of Construction Work" section in the Introduction.)

Value added—Derived for each establishment, value added is equal to dollar value of business done, less costs for construction work subcontracted to others, and costs for materials, components, supplies and fuels. For SIC 6552 and SIC 1531, for which land receipts are significant, land receipts are also subtracted from dollar value of business done. (For a further explanation see "Duplication in Value of Construction Work" section in the Introduction.)

Selected costs—Represents the costs for materials, components, and supplies; costs for construction work subcontracted to others; and costs for selected power, fuels, and lubricants. Capital expenditures and rental costs for machinery, equipment, and structures are shown elsewhere.

Costs for materials, components, and supplies include:

- total costs to reporting establishments during 1987 for the purchase of all materials, components, and supplies, except fuels. (Supplies include expendable tools which are charged to current accounts.)
- freight and other direct charges should represent only amount paid after discounts, and the value of materials, components, and supplies obtained from other establishments of the respondent's company.
- costs for materials, components, and supplies used by the reporting establishments in the construction or reconstruction of buildings/structures for themselves which are chargeable to their fixed assets accounts, are included in this item as are costs for materials bought and resold to others.
- costs made for direct purchases of materials, components, and supplies even though the purchases were subsequently provided to subcontractors for their use.

Excluded from this item are:

- industrial and other specialized machinery and equipment, such as printing presses; computer systems; etc., which are not an integral part of a structure
- materials furnished to contractors by the owners of projects.

Costs for construction work subcontracted to others include:

- all costs during 1987 for construction work subcontracted out to other construction contractors.

Excluded from this item are:

- The costs to the reporting establishment for its purchases of materials, components, and supplies, provided to a subcontractor for his use. Such costs are reported under a separate category, "costs for materials, components, and supplies."
- costs for the rental of machinery or equipment.

Costs for selected power, fuels, and lubricants include:

- costs for fuels, lubricants, and electric energy purchased during the year from other companies, or received from other establishments of the company.
- costs for natural and manufactured gas, fuel oil, coal and coke products, etc.

Rental costs for machinery, equipment, and buildings—Includes all costs during 1987 for renting or leasing construction machinery and equipment, transportation equipment, production equipment, office equipment, furniture and fixtures, scaffolding, office space, and buildings. It

excludes costs for the rental of land. It also excludes costs under agreements which, in effect, are conditional sales contracts such as capital leases. Such costs are included in "capital expenditures."

Selected purchased services—Includes all costs during 1987 for communication services purchased from other companies or from other establishments of the company. It also includes the cost of all repairs made to structures and equipment by outside companies, or from other establishments of the same company. It includes only the cost of that repair necessary to maintain property and equipment. It excludes the cost of improvements that increase the value of property, or the cost of adapting it for another use. Such costs are included in "capital expenditures".

Assets and depreciation—Refers to the original cost of all fixed tangible assets such as buildings and other structures (offices, shops, etc.); stationary machinery (generators, shop equipment, etc.); mobile machinery (tractors, trucks, etc.); and other equipment (office furniture and fixtures, etc.). Not included are such items as current assets, depletable assets, intangible assets, and nondepreciable assets.

Data on assets and depreciation were collected separately for: (1) buildings and other structures, additions, and related facilities; and, (2) machinery and equipment.

Respondents were also asked to report capitalized expenditures, depreciation charges, and the gross value of assets sold, retired, scrapped, destroyed, etc., during 1987.

Capital expenditures—Refers to all costs actually incurred during 1987 which were or would be chargeable to the fixed assets accounts of the reporting establishments and which were of the type for which depreciation accounts are ordinarily maintained. These expenditures cover the acquisition, the construction, and the major alteration of the reporting establishment's own buildings and other structures, whether purchased, constructed under contract, or constructed by the reporting establishment's own forces; and the acquisition of machinery and equipment.

If leasing arrangements met the criteria set down by the Financial Accounting Standards Board (FASB) for a capital lease, respondents were instructed to report the original cost or market value of that equipment or building as a fixed asset and capital expenditure if acquired during 1987.

If capital expenditures were not recorded directly at the establishment level but handled centrally at the company or division level, respondents were requested to report appropriate estimates for the individual establishments.

Inventories—Includes all of the materials and supplies that are owned regardless of where they are held. Excludes materials which are owned by others, but held by the reporting establishment.

Builders who built on their own account for sale were requested to report work in progress and finished units not sold for buildings and other structures built for sale.

Inventories of multi-establishment companies were instructed to be reported by the establishment that is responsible for the inventories even if these inventories were held at a separate location.

Ownership of construction projects—This item shows the distribution of the value of construction work done by ownership of the project, that is, Government owned or privately owned. This classification relates to the ownership of the projects or work undertaken during the construction phase. Government owned projects are shown separately for Federal, and State and local governments.

Value of construction work subcontracted in from others—Includes the value of construction work during 1987 for work done by reporting establishments for other construction contractors or builders. Establishments were asked to report the approximate percent of total value of construction work accounted for by such work, and the percentages reported were applied to the reported value of construction work to develop a value for this item.

Types of construction—This item provides data by the types of buildings, structures, or other facilities being constructed or worked on by construction establishments in 1987. Respondents were instructed that each building, structure, or other facility should be classified in terms of its function. For example, a restaurant building was to be classified in the restaurant category whether it was designed as a commercial restaurant building or an auxiliary unit of an educational institution. If respondents worked on more than one type of building or structure in a multibuilding complex, they were instructed to report separately for each building or type of structure. If they worked on a building that had more than one purpose, i.e., office and residential, or commercial, they were to classify the building by major purpose.

In addition all respondents were requested to report the percentage of the value of construction work done for new construction, additions, alterations, or reconstruction, and maintenance and repair work for each of these types. See the definition of "Construction" for the meanings of these terms.

Building construction:

- **Single-family houses, detached**—Includes all residential buildings constructed for one family use.
- **Single-family houses, attached (include townhouses)**—Includes all residential buildings with two or more living quarters side by side, completely independent of one another, and separated by an unbroken wall from ground to roof.
- **Apartment buildings with two or more apartments**—Includes high-rise, low-rise, or any structures containing two or more housing units (excluding attached single-family houses and townhouses described above).
- **Hotels and motels**—Includes hotels, motels, and tourist cabins intended for transient accommodations.

- **Other residential buildings**—Includes dormitories, fraternity and sorority houses, nurses homes, and other nonhousekeeping residential structures.
- **Office buildings**—Includes all buildings which are used primarily for office space or for government administrative offices. Also included are banks or financial buildings which are three stories or more.
- **Other commercial buildings, such as stores, restaurants, and automobile service stations**—Includes all buildings which are intended for use primarily in the wholesale, retail, and service trades. For example, shopping centers, department stores, drug stores, restaurants, public garages, auto service stations, and one or two story bank or financial institutions.
- **Industrial buildings**—Includes all industrial buildings and plants which are used to house production and assembly activities. Heavy industrial facilities such as blast furnaces, petroleum refineries, chemical complexes, etc., are not included in this category, but under nonbuilding construction.
- **Warehouses**—Includes commercial warehouses, cold storage plants, grain elevators, mini-warehouses, and other such storage buildings.
- **Religious buildings**—Includes all buildings which are intended for religious services or functions, such as churches, synagogues, convents, monasteries, and seminaries.
- **Educational buildings**—Includes all buildings which are used directly in administrative and instructional activities, such as colleges, universities, elementary and secondary schools, correspondence, commercial, and trade schools. Libraries, museums, and art galleries, as well as laboratories which are not a part of a manufacturing establishment, are also included.
- **Hospitals and institutional buildings**—Includes all buildings which are intended to provide hospital and institutional care, such as clinics, infirmaries, sanitariums, nursing homes, homes for the aged, and orphanages.
- **Farm buildings, nonresidential**—Includes nonresidential farm buildings such as barns, poultry houses, implement sheds, and farm silos.
- **Amusement, social, and recreational buildings**—Includes buildings which are used primarily for entertainment, social and recreational activities, such as sports arenas, theaters, music halls, golf and country club buildings, skating rinks, bowling alleys, and indoor swimming pools.
- **Other nonresidential buildings**—Includes nonresidential buildings which are not classified elsewhere, such as fire stations, prisons, civic centers, bus and air passenger terminals and hangars.

Nonbuilding construction:

- **Highways, streets and related work, such as installation of guardrails, highway signs, etc.**—Includes streets, roads, alleys, sidewalks, curbs and gutters, culverts, right-of-way drainage, erosion control and lighting. Also includes earthwork protective structures when used in connection with road improvements.
- **Outdoor swimming pools**—Includes wading pools and reflecting pools.
- **Recreational facilities**—Includes athletic fields, golf courses, outdoor tennis courts, trails, and camps.
- **Bridges and elevated highways**—Includes viaducts and overpasses; roads, highways, railroads, and causeways built on structural supports.
- **Tunnels**—Includes highway, pedestrian, and railroad tunnels.
- **Railroad construction**—Includes the construction of railroad beds, tracks, freight yards, and signal towers.
- **Subway construction**—Includes urban mass transit subway systems above or below ground.
- **Dam and reservoir construction**—Includes hydroelectric, water supply, and flood control dams and reservoirs.
- **Marine construction**—Includes dredging, underwater rock removal, breakwaters, navigational channels, jetties, and locks.
- **Harbor and port facilities**—Includes docks, piers, and wharves.
- **Conservation and development construction**—Includes land reclamation, irrigation projects, drainage canals, levees, and flood control projects.
- **Power and communication transmission lines, towers, and related facilities**—Includes electric power lines, telephone and telegraph lines, fiber optic cables, cable television lines, television and radio towers, electric light and power facilities.
- **Power plants, except nuclear**—Includes electric and steam generating plants.
- **Power plants, nuclear**—Includes atomic energy plants, and nuclear reactors.
- **Sewers, sewerlines, and related facilities**—Includes sanitary and storm sewers, and related facilities.
- **Sewage treatment plants**—Includes sewage treatment and waste disposal plants.
- **Water mains and related facilities**—Includes water supply systems and related facilities.

- **Water treatment plants**—Includes water filtration and water softening plants.
- **Pipeline construction other than sewer or waterlines**—Includes pipelines for the transmission of gas, petroleum products, and liquefied gases.
- **Blast furnaces, petroleum refineries, chemical complexes, etc.**—Includes coke ovens, and mining appurtenances such as tipples and washeries.
- **Other nonbuilding construction**—Includes all types of nonbuilding construction, not included elsewhere.

APPENDIX B.

Standard Industrial Classification Titles for Industry Groups and Industries

SIC code	Industry titles	SIC code	Industry titles
15	BUILDING CONSTRUCTION—GENERAL CONTRACTORS AND OPERATIVE BUILDERS	17	CONSTRUCTION—SPECIAL TRADE CONTRACTORS—Con.
152	General Building Contractors—Residential Buildings	173	Electrical Work Special Trade Contractors
1521	General Contractors—Single-Family Houses	1731	Electrical Work Special Trade Contractors
1522	General Contractors—Residential Buildings, Other Than Single-Family	174	Masonry, Stone Work Tile Setting, and Plastering Special Trade Contractors
153	Operative Builders	1741	Masonry, Stone Setting, and Other Stone Work Special Trade Contractors
1531	Operative Builders	1742	Plastering, Drywall, Acoustical, and Insulation Work Special Trade Contractors
154	General Building Contractors—Nonresidential Buildings	1743	Terrazzo, Tile, Marble, and Mosaic Work Special Trade Contractors
1541	General Contractors—Industrial Buildings and Warehouses	175	Carpentry and Floor Work Special Trade Contractors
1542	General Contractors—Nonresidential Buildings, Other Than Industrial Buildings and Warehouses	1751	Carpentry Work Special Trade Contractors
16	HEAVY CONSTRUCTION OTHER THAN BUILDING CONSTRUCTION—CONTRACTORS	1752	Floor Laying and Other Floor Work Special Trade Contractors, Not Elsewhere Classified
161	Highway and Street Construction, Except Elevated Highways	176	Roofing, Siding, and Sheet Metal Work Special Trade Contractors
1611	Highway and Street Construction Contractors, Except Elevated Highways	1761	Roofing, Siding, and Sheet Metal Work Special Trade Contractors
162	Heavy Construction, Except Highway and Street Construction	177	Concrete Work Special Trade Contractors
1622	Bridge, Tunnel, and Elevated Highway Construction Contractors	1771	Concrete Work Special Trade Contractors
1623	Water, Sewer, Pipeline, and Communications and Powerline Construction	178	Water Well Drilling Special Trade Contractors
1629	Heavy Construction, Not Elsewhere Classified	1781	Water Well Drilling Special Trade Contractors
17	CONSTRUCTION—SPECIAL TRADE CONTRACTORS	179	Miscellaneous Special Trade Contractors
171	Plumbing, Heating, and Air-Conditioning Special Trade Contractors	1791	Structural Steel Erection Special Trade Contractors
1711	Plumbing, Heating, and Air-Conditioning Special Trade Contractors	1793	Glass and Glazing Work Special Trade Contractors
172	Painting and Paper Hanging Special Trade Contractors	1794	Excavation Work Special Trade Contractors
1721	Painting and Paper Hanging Special Trade Contractors	1795	Wrecking and Demolition Work Special Trade Contractors
		1796	Installation or Erection of Building Equipment, Special Trade Contractors, Not Elsewhere Classified
		1799	Special Trade Contractors, Not Elsewhere Classified
		6552	LAND SUBDIVIDERS AND DEVELOPERS, EXCEPT CEMETERIES

APPENDIX C.

Geographic Divisions and States

NEW ENGLAND STATES

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

MIDDLE ATLANTIC STATES

New Jersey
New York
Pennsylvania

EAST NORTH CENTRAL STATES

Illinois
Indiana
Michigan
Ohio
Wisconsin

WEST NORTH CENTRAL STATES

Iowa
Kansas
Minnesota
Missouri
Nebraska
North Dakota
South Dakota

SOUTH ATLANTIC STATES

Delaware
District of Columbia
Florida
Georgia
Maryland

SOUTH ATLANTIC STATES—Con.

North Carolina
South Carolina
Virginia
West Virginia

EAST SOUTH CENTRAL STATES

Alabama
Kentucky
Mississippi
Tennessee

WEST SOUTH CENTRAL STATES

Arkansas
Louisiana
Oklahoma
Texas

MOUNTAIN STATES

Arizona
Colorado
Idaho
Montana
Nevada
New Mexico
Utah
Wyoming

PACIFIC STATES

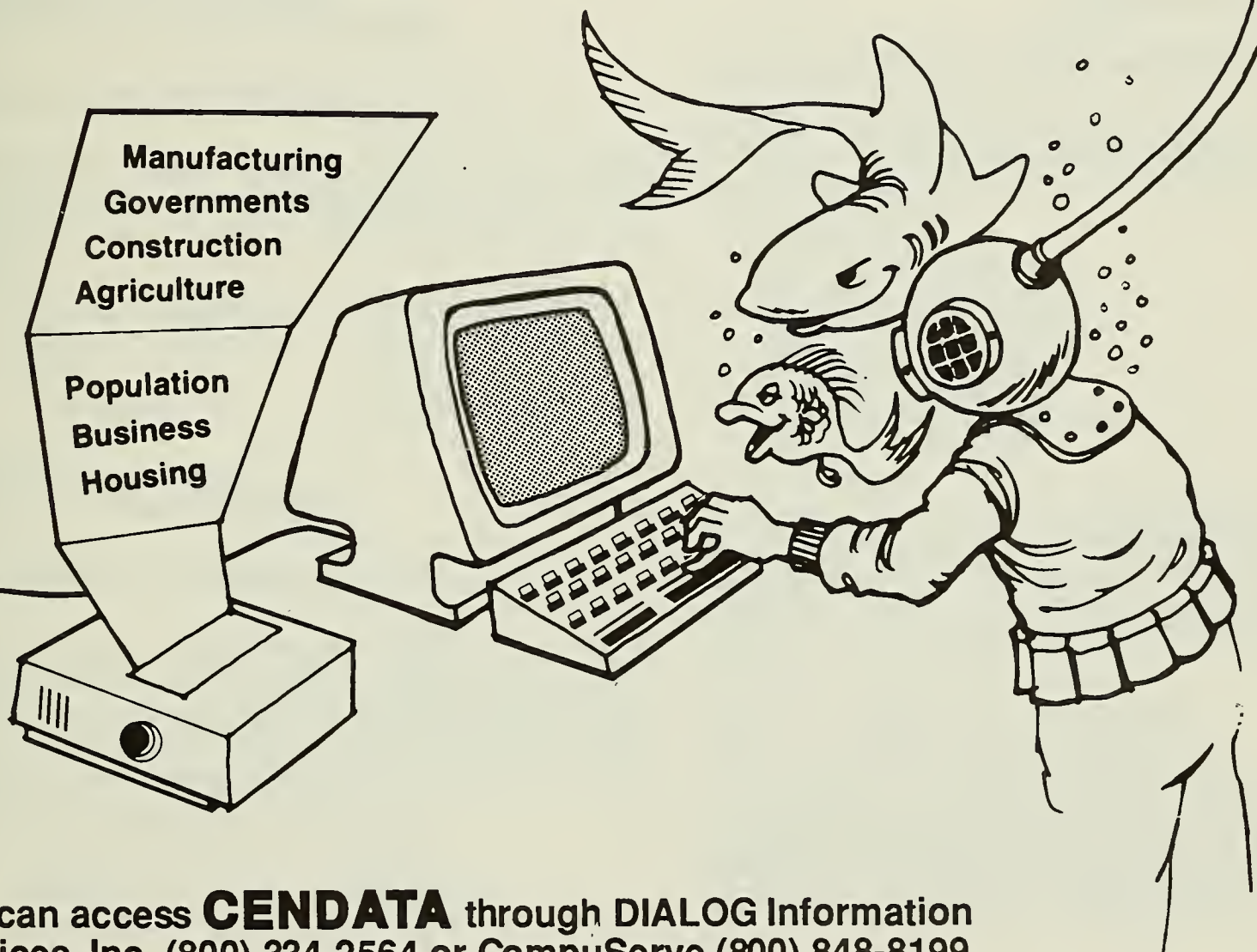
Alaska
California
Hawaii
Oregon
Washington

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PUBLICATION PROGRAM

1987 CENSUS OF CONSTRUCTION INDUSTRIES

The Census of Construction Industries is taken once every 5 years. The census covers all establishments engaged in construction, including:

- Building contractors
- Heavy construction contractors
- Special trade contractors (including plumbers, carpenters, painters, electricians)
- Land developers and subdividers

Data products in the Census of Construction Industries are issued in 4 publication series and in 3 other media:

- Printed reports [P]
- CD-ROM [C]
- Computer tape [T]
- Highlights online [+]

Preliminary Industry Series (CC87-I-1(P) through CC87-I-28(P))

(Available November 1988 through May 1989) [P]

Twenty-seven separate industry reports and a United States summary report, providing national statistics for establishments with payroll. Statistics shown for 1987 include:

- Number of establishments
- Number of employees
- Payroll
- Hours worked
- Value of construction work done, by type of structure
- Selected operating costs

Final Industry Series (CC87-I-1 through CC87-I-28)

(Available June 1989 through November 1989) [P] [C] [T] [+]

Twenty-seven separate industry reports and a United States summary report, providing statistics for the Nation and individual States on establishments with payroll. These reports update figures from the preliminary industry series (employment, payroll, value of construction, etc.) and provide measures of the following:

- Capital expenditures
- Inventories
- Industry profiles
- Assets
- Depreciation
- And much more

Geographic Area Series (CC87-A-1 through CC87-A-10)

(Available January 1990 through March 1990) [P] [C] [T] [+]

Nine reports on the construction industries, representing each census geographic division, and a United States summary report. Regional reports provide detailed data for States and metropolitan statistical areas.

Subject Report—Legal Form of Organization and Type of Operation (CC87-S-1)

(Available May 1990) [P]

One report providing selected national statistics for each industry by legal form of organization and type of operation. This report includes data for establishments with and without payroll. Data in this report include—

- Employment
- Payroll
- Value of construction work done
- Selected operating costs

OTHER ECONOMIC CENSUSES REPORTS

The Census of Construction Industries is part of the 1987 Economic Censuses. These are conducted at five-year intervals in years ending in 2 and 7 and consist of seven separate censuses:

- Census of Retail Trade
- Census of Wholesale Trade
- Census of Service Industries
- Census of Transportation
- Census of Manufactures
- Census of Mineral Industries
- Census of Construction

...plus several related programs: enterprise statistics; information on minority-owned and women-owned businesses; and the Census of Outlying Areas, including separate economic censuses of Puerto Rico and other outlying areas. The Census of Agriculture and Census of Governments are conducted separately.

HOW TO ORDER DATA PRODUCTS

Order forms for the specific reports and other data products may be obtained from Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, DC 20233. If you have any questions, call Census Customer Services 1-(301)-763-4100.



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CC87-I-18

Roofing, Siding, and Sheet Metal Work Special Trade Contractors

1987 Census of (

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